ARMOR AT WAR SERIES

7054

German Half-Tracks of World War Two

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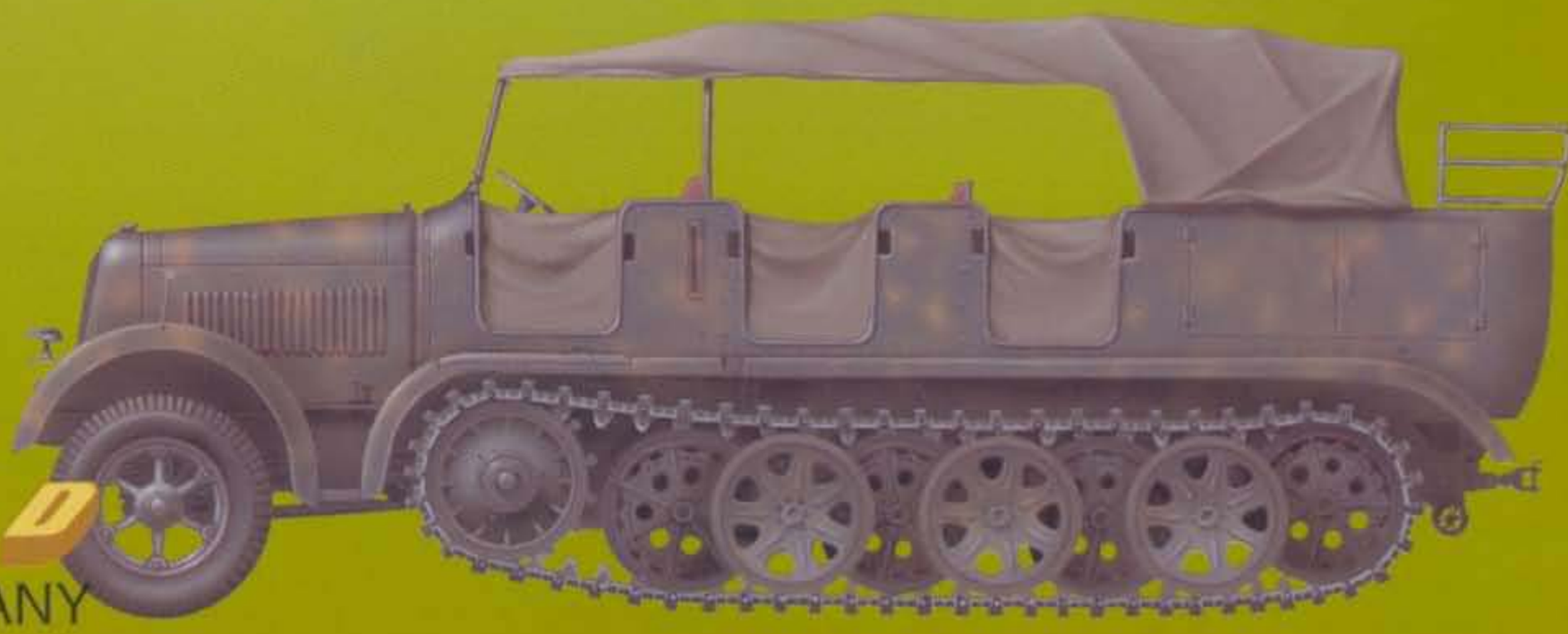

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INTRODUCTION

After World War One, a few far-sighted military men in various countries began to conceive and design the combined-arms formations that would be used with such stunning effect beginning in 1939. Aside from improving the mobility, protection and firepower of tanks, the more astute understood that tanks would need to be accompanied into battle by supporting arms, specifically: infantry, artillery and engineers. Means of providing logistic support, liaison with supporting aircraft, command and control of widely dispersed units, and of gathering and disseminating timely intelligence also meant that reconnaissance, supply and communications assets would have to be as mobile as the tanks they were intended to support. An all "fully-tracked" field army was thought to be too expensive, so the semi-tracked support vehicle (commonly called a "half-track") was born. The "half-track" concept was embraced by the French, the US and most notably (for sheer variety of types), Germany.

ARTILLERY PRIME MOVERS

In order to support their evolving doctrine of combined-arms mechanized warfare, later known as "Blitzkrieg", Germany envisioned several types of half-tracked tractors, which were classified by the weight of their towed load. These vehicles were designated "Sonderkraftfarzeug" (special motorized vehicle), abbreviated as "Sd.Kfz." The six classes initially conceived, along with the later HK-series Kettenkraftrad, were:

- 1/2-ton class, Sd.Kfz. 2.
- 1-ton class, Sd.Kfz. 10.
- 3-ton class, Sd.Kfz. 11.
- 5-ton class, Sd.Kfz. 6.
- 8-ton class, Sd.Kfz. 7.
- 12-ton class, Sd.Kfz. 8.
- 18-ton class, Sd.Kfz. 9.

All bore a strong family resemblance to each other, being of open construction with a canvas roof. Their longer, 1/2-track design featured lubricated, rubber-shod tracks, and interleaved road wheels. This allowed for a decent road speed and good floatation in cross country mode. All, with the exception of the Sd.Kfz. 7, had torsion bar suspension, while the front wheels were not driven. The front wheels steered for slight turns; differential braking of the tracks was engaged for larger turns.

Sd.Kfz. 2

The tiny Kleines Kettenkraftrad was the only vehicle from the rationalized HK (Halb-Ketten) series to see service. Produced by NSU, it was intended for use by airborne units as a tractor for their special light-weight artillery such as the 7.5cm and 10.5cm l.G 40 recoilless guns. It also found use with mountain, infantry and armored units, as an all-terrain supply and courier vehicle. The Luftwaffe also made use of them as airfield tractors. Two variations were built for communications line installation: the Sd.Kfz. 2/1 and 2/2.

Sd.Kfz. 6

Initially designed as an engineer equipment and personnel carrier, the Mittlerer Zugkraftwagen 5-ton Sd.Kfz. 6 was also used to tow the same class of ordnance as the 3-ton Sd.Kfz. 11, such as the 10.5cm le.FH 18. Later it was used to haul the 8.8cm PaK 43 or PaK 43/41. A variation mounted a 3.7cm FlaK 36/37; another mounted an ex-Soviet 7.62cm gun with an armored rear superstructure.

Sd.Kfz. 7

The Mittlerer Zugkraftwagen 8-ton Sd.Kfz. 7 was the prime mover for the 8.8cm FlaK, as well as the 10cm s.K 18 and 15cm s.FH 18. Variations mounted a 2cm Flakvierling 38, or a 3.7cm FlaK 37 or 43 (some had armor over the engine and driver's compartments). Other versions included: an armored Feuerleitpanzer used as a launch control vehicle in V-2 ballistic missile launch regiments, a semi-armored tractor used by Panzerjäger units and a version with a wooden load bed.

Sd.Kfz. 8

The Mittlerer Zugkraftwagen 12-ton Sd.Kfz. 8 was designed to tow heavier artillery such as the 17cm s.K 18, 21cm Mörser 18 and 10.5cm FlaK 39. Some vehicles were fully armored; some others were fitted with an enclosed truck-type cab. A small number of these vehicles were modified for bunker-busting and anti-tank work by adding armor, ammo storage and a modified 8.8cm FlaK 18 with direct sights.

Sd.Kfz. 9

The Schwerer Zugkraftwagen 18-ton Sd.Kfz. 9 was used for recovery of tanks and often towed the 24-ton capacity Sd.Ah. 116 tank-transporter trailer. It was fitted with a 40-ton capacity winch; some versions had a spade at the rear to aid in recovery operations. It was also seen towing components of the 17cm s.K 18, 21cm Mörser 18 and 60cm Mörser Karl. A small number of these vehicles were converted to mobile FlaK guns by adding armor, ammo stowage and a shielded 8.8cm FlaK 36. The Sd.Kfz. 9/1 mounted a 6-ton crane; the Sd.Kfz. 9/2 mounted a 10-ton crane.

Sd.Kfz. 10

The Leichter Zugkraftwagen 1-ton Sd.Kfz. 10 was designed to tow light ordnance such as the 2cm FlaK 30 or 38, 3.7cm PaK 36, 5cm PaK 38 and 7.5cm le.IG 18. It was also used to mount a 2cm FlaK 30 or FlaK 38, sometimes with additional armor plating. Field modifications saw 3.7cm and 5cm PaK mounted as well.

Sd.Kfz. 11

The Leichter Zugkraftwagen 3-ton Sd.Kfz. 11 was designed to tow light and medium ordnance, typically the 2cm Flakvierling 38, 3.7cm FlaK 37 or 43, 7.5cm PaK 40, 10.5cm le.FH 18, 15cm s.IG 33, 15cm Nbw 41 and 21cm Nbw 42. A semi-armored Sd.Kfz. 11 mounting a 2cm FlaK 38 was designated "2cm FlaK 38 auf Selbstfahrlafette Zgkw. Sd.Kfz. 11". A special body for carrying rockets was issued for towing

the Nebelwerfer; another held equipment for chemical decontamination. A pioneer body was also built. Later vehicles had a press-board, enclosed cab and a wooden load bed.

Maultier

The Maultier ("Mule") was an expedient means employed by the Germans to overcome the terrain difficulties encountered on the Eastern Front. Standard 3-ton trucks, built by Ford, Opel and Magirus, were converted by the addition of a British Carden-Lloyd suspension system in place of the rear wheels. The larger Mercedes-Benz 4.5-ton truck was converted by installing the suspension system of a Pz.Kpw. II in place of the rear wheels. The base designation was Sd.Kfz. 3 for the Ford, Opel and Magirus vehicles, and Sd.Kfz. 3/5 for the Mercedes-Benz vehicle. Some 2-ton Maultiers mounted 2cm FlaK, while the larger 4.5-ton vehicles sometimes mounted a 3.7cm FlaK. 300 Opel vehicles were armored and armed with a ten-tube 15cm Nebelwerfer 42, as the Panzerwerfer 42 (Sd.Kfz. 4/1); a further 300 were built as Munitionskraftwagen ammunition supply vehicles (Sd.Kfz. 4).

LEICHTE SCHÜTZENPANZERWAGEN Sd.Kfz. 250

The Sd.Kfz. 250 was designed to provide armored reconnaissance troops in the Panzer and Panzergrenadier Divisions with a flexible armored vehicle possessing better off-road mobility than the Sd.Kfz. 222 armored cars. Based on the 1-ton Sd.Kfz. 10 tractor, armor was added. To compensate for the weight of the armor, the hull was shortened and the forward-most pair of road wheels on each side was deleted. The base vehicle carried six troops and was armed with a pair of MG34 or 42 machine guns. There was a single door on the rear plate for entry and egress, while the crew could also dismount over the vehicle's sides. Twelve official variants existed as well as sub-versions of some of them. Two special versions of this half-track, which preceded the entire 250 series on the production line, were issued to Sturmgeschütz units. One carried ammunition (Sd.Kfz. 252); the other was a battery command and observation vehicle (Sd.Kfz. 253).

Leichte Schützenpanzerwagen Sd.Kfz. 250/1. Light armored personnel carrier for reconnaissance group.

Leichte Fernsprechpanzerwagen Sd.Kfz. 250/2. Light armored telephone cable laying vehicle.

Leichte Funkpanzerwagen Sd.Kfz. 250/3. Light armored radio vehicle, with two different types for use by Luftwaffe ground units for air liaison, and a third "general-purpose" vehicle for use by other types of units.

Leichte Beobachtungspanzerwagen Sd.Kfz. 250/4. Light armored observation vehicle for Sturmgeschütz units; replaced the Sd.Kfz. 253.

Leichte Beobachtungspanzerwagen Sd.Kfz. 250/5. Light armored observation vehicle which came in two sub-types, each with differing radio installations.

Leichte Munitionspanzerwagen Sd.Kfz. 250/6. Light armored ammunition transport vehicle; replaced the Sd.Kfz. 252 in Sturmgeschütz units. There were three versions; one designed to carry short StuK L/24 ammunition, the other two designed to carry the longer StuK L/43 or L/48 ammunition.

Leichte Schützenpanzerwagen Sd.Kfz. 250/7 (8cm s.Gr.W. 34). Light armored carrier for 8cm mortar. A second variation (Munitionsfahrzeug) was issued to platoon commanders; it carried 66 mortar rounds and extra radio equipment.

Leichte Schützenpanzerwagen Sd.Kfz. 250/8 (7.5cm). Light armored support vehicle mounting a 7.5cm KwK 37 L/24 tank gun.

Leichte Schützenpanzerwagen Sd.Kfz. 250/9 (2cm). Light armored reconnaissance vehicle mounting a 2cm KwK 38 tank gun in a "Haengelafette" suspended mount, within an open-topped rotating turret; substitute for the wheeled Sd.Kfz. 222.

Leichte Schützenpanzerwagen Sd.Kfz. 250/10 (3.7cm). Light armored vehicle for platoon commander, mounting a 3.7cm PaK 36 anti-tank gun.

Leichte Schützenpanzerwagen Sd.Kfz. 250/11 (s.PzB. 41). Light armored vehicle for platoon commander mounting a 2.8cm "squeeze-bore" high-velocity, heavy anti-tank rifle; substitute for the Sd.Kfz. 250/10.

Leichte Messtruppanzerwagen Sd.Kfz. 250/12. Light armored artillery survey and plotting vehicle. Sub-variants were also to be used for sound-ranging and flash-spotting.

Leichte Gepanzerte Munitionskraftwagen Sd.Kfz. 252. Light armored ammunition transporter for Sturmgeschütz units; supplanted by the Sd.Kfz. 250/6

Leichte Gepanzerte Beobachtungskraftwagen Sd.Kfz. 253. Light armored observation vehicle for Sturmgeschütz units; replaced by the Sd.Kfz. 250/4.

MITTLERER SCHÜTZENPANZERWAGEN Sd.Kfz. 251

It has been a long-held belief among military practitioners that only infantry can hold ground, regardless of how that ground was initially taken. Proponents of mechanized combined-arms formations foresaw that tanks would protect infantry from enemy machine guns and strong-points; infantry would protect tanks from close-in attack by enemy anti-tank assets. This cooperation would allow an attack to proceed with great speed and also limit casualties to both arms. Thus was born the Mittlerer Schützenpanzerwagen (medium armored personnel carrier) Sd.Kfz. 251/1. The basic vehicle carried ten troops, a driver and a section commander, and was armed with two MG34 or 42 machine guns. The body was armored against small-arms and artillery fragments, but was open on top. There

was a pair of doors at the vehicle's rear for entry and exit; troops could also dismount over the vehicle's sides. Production totals exceeded 15,000 vehicles, making the Sd.Kfz. 251 series the most widely-produced German AFV of World War Two. There were four body styles: the Ausf. A, B, C and D. Twenty-two official versions, and variations within each version, were produced.

Mittlerer Schützenpanzerwagen Sd.Kfz. 251/1. Standard armored personnel carrier for Panzer-Grenadiers (Armored Infantry). Some versions had a sustained-fire mount for the forward machine gun; others were fitted with 28cm or 32cm rockets.

Mittlerer Schützenpanzerwagen Grenatenwerfer (8cm GrW 34) Sd.Kfz. 251/2. Armored personnel carrier, with 8cm mortar; carried 66 rounds for mortar.

Mittlerer Funkpanzerwagen Sd.Kfz. 251/3. Armored radio carrier; there were nine different possible radio combinations.

Mittlerer Schützenpanzerwagen (7.5cm le.IG 18) Sd.Kfz. 251/4. Armored tractor and ammunition carrier for 7.5cm infantry gun; later replaced by the self-contained /9.

Mittlerer Schützenpanzerwagen (Pi) Sd.Kfz. 251/5. Armored command vehicle for pioneer platoon.

Mittlerer Kommandopanzerwagen Sd.Kfz. 251/6. Armored command post vehicle; discontinued in 1943, function transferred to /3.

Mittlerer Pioneerpanzerwagen Sd.Kfz. 251/7. Armored pioneer vehicle equipped with tools, explosives and assault bridge sections.

Mittlerer Krankenpanzerwagen Sd.Kfz. 251/8. Armored ambulance.

Mittlerer Schützenpanzerwagen (7.5cm KwK 37) Sd.Kfz. 251/9. Armored support vehicle mounting short 7.5cm tank gun. Early versions on the Ausf. C and D featured a low-profile recessed gun mount. The later Ausf. D featured a high-profile "unified" mount.

Mittlerer Schützenpanzerwagen (3.7cm PaK 36) Sd.Kfz. 251/10. Armored personnel carrier for platoon leader with 3.7cm anti-tank gun; provided a platoon leader with immediate anti-tank support.

Mittlerer Fernsprechpanzerwagen Sd.Kfz. 251/11. Armored telephone exchange and cable laying vehicle.

Mittlerer Messtrupp- und Gerätpanzerwagen Sd.Kfz. 251/12. Armored artillery survey section vehicle.

Mittlerer Schallaufnahmepanzerwagen Sd.Kfz. 251/13. Armored artillery sound-recording vehicle.

Mittlerer Schallauswertepanzerwagen Sd.Kfz. 251/14. Armored artillery sound-ranging vehicle.

Mittlerer Lichtauswertpanzerwagen Sd.Kfz. 251/15. Armored artillery flash-spotting vehicle.

Mittlerer Flammpanzerwagen Sd.Kfz. 251/16. Armored flamethrower vehicle equipped with two 1.4cm flame projector mounts and one portable 7mm flamethrower; later versions dispensed with the portable flamethrower.

Mittlerer Schützenpanzerwagen (2cm FlaK 38) Sd.Kfz. 251/17. Armored anti-aircraft vehicle mounting 2cm FlaK 38 or 2cm KwK 38. Early vehicles based on the Ausf. C had drop sides; the Ausf. D mounted a re-designed turret that could fit within a standard hull.

Mittlerer Beobachtungspanzerwagen Sd.Kfz. 251/18. Armored observation vehicle.

Mittlerer Fernsprech-Betriebspanzerwagen Sd.Kfz. 251/19. Armored telephone switchboard vehicle.

Mittlerer Schützenpanzerwagen Infrarotscheinwerfer "Uhu" Sd.Kfz. 251/20. Armored infrared searchlight vehicle; designed to provide target illumination for specially equipped Panther Ausf. G tanks. Mounted a 60cm infrared searchlight, a 20cm IR searchlight, a BG 1251 IR sight, and a FG 1252 IR sight.

Fliegerabwehr Schützenpanzerwagen (2cm MG151 Drilling) Sd.Kfz. 251/21. Armored anti-aircraft vehicle with three 15mm or 2cm auto-cannon on a fully-rotating pedestal mount.

Mittlerer Schützenpanzerwagen (7.5cm PaK 40) Sd.Kfz. 251/22. Armored anti-tank vehicle mounting a 7.5cm anti-tank gun on a limited-traverse mount.

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At home in the worst of the elements, this Kettenkrad grinds its way through deep snow. Note the insignia of the 1.Ski-Jäger-Division on the rear flank of this whitewashed example, the retaining clips on the upper part of the rifle racks, and the partially enclosed area within the framework that supports the rifle racks. The driver is wearing his hooded anorak with the camouflage side out, while his hands are enclosed in heated bladders.

Another example of the Kettenkrad's "go-anywhere" abilities, this one appears to be traveling over flooded ground, or what's more likely, a frozen body of water whose surface has began to thaw. This tough little vehicle was powered by an Opel Olympia 4-cylinder gasoline engine, which developed 37 hp at 3400 rpm. This gave it a top speed on roads of 50 mph and a range of 156 miles.

A Sd.Kfz. 2 makes its way along a muddy track, towing its 0.45-ton capacity trailer and carrying a singe passenger, along with the driver. The vehicle's license plate, normally attached to the front wheel's fender is missing, while there is a tactical marking for a battalion headquarters unit on the front edge of the body. The Kettenkrad weighed 1.56-tons fully loaded, was 9.91-feet long, 3.3-feet wide and 3.96-feet high.

A pristine Kettenkrad poses for the camera with almost textbook stowage, including a tarp neatly rolled and placed over the engine access hatch, as well as a tarp covering its trailer. Note the absence of the front license plate and also the open nature of the rear compartment framing, which also does not have rifle racks attached. The driver is also lavishly equipped with hand-warmers, which consisted of a system that ducted hot air from the engine to these bladder-like appendages.

A mini-convoy of Kettenkrads passes a well-sited and camouflaged 5cm PaK 38 anti-tank gun. Note how the Kettenkrads are over-loaded with passengers, and that they move in a "tactical sense", i.e., too slow to raise a tell-tale cloud of dust, which would alert an observant enemy to their location.

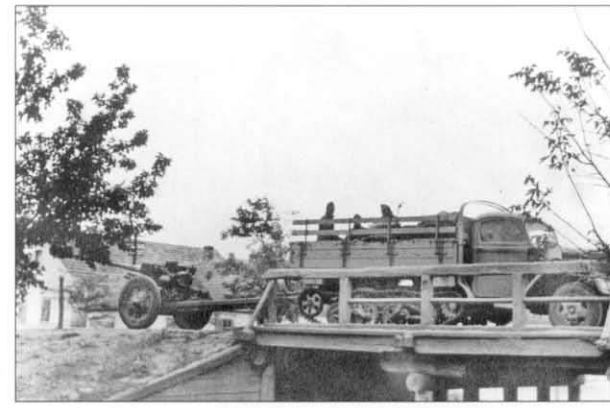
A Kettenkrad pauses to allow a horse-drawn column to pass. Note the Kar98k rifle clipped to the rack on the right side, just above the mud flaps. The man in the foreground has a commemorative shield or unit crest on his shoulder, which is unfortunately undecipherable.

This interesting photograph depicts a Kettenkrad towing two ski troops along a snow-covered track. Note the straps each man grasps, which are attached to the vehicle. Their relative lack of weapons and equipment would seem to indicate they are on a "joy ride", or are demonstrating a technique for the Propaganda Kompanie (PK) photographer.

An Opel Maultier pulls a 10.5cm le.FH 18 down the nose ramp of a Messerschmitt 323 "Gigant" transport plane. The Maultier was based upon the Opel-Blitz 3-6-36S with a British-inspired Carden-Lloyd suspension system mounted in place of the dual rear wheels. It could tow a three-ton trailer or similar load, which would have enabled it to pull the le.FH 18, as seen here. The Opel Maultier was powered by a six-cylinder Opel engine, which developed 68 hp at 3000 rpm. This gave the vehicle a top speed on roads of 24 mph and a range of 100 miles.

Ford also produced Maultiers for the Wehrmacht, one of which is seen at a rail yard behind a pile of discarded ammunition packing cases of various types. The Ford Maultier was based upon their V3000S lorry, with the rear wheels replaced by the Cardon-Lloyd suspension system. It could carry two-tons of cargo and tow a two-ton load.

This Ford Maultier tows a captured Soviet 7.62cm PaK 36(r), which was the German designation for the re-bored and re-chambered 76.2mm F-22 gun. From this angle, with the front end of the vehicle partly obscured, this Maultier can be identified as a Ford by the small rounded mud guard under the load bed, forward of the track assembly.



The Maultier was also fitted with an armored body that had a maximum thickness of 10mm. This photo depicts an ammunition transport version, which was designated Gleisketten-Lastkraftwagen 3t (Maultier) gp. (Sd.Kfz. 4), also called a Munitionskraftwagen. From October of 1943, a battery of Panzerwerfer consisted of eight launch vehicles and eight Munitionskraftwagen, which carried 20 rocket re-loads each.

Mercedes-Benz also produced a Maultier which combined its L4500R lorry body with suspension components from the Pz.Kpfw. II. This rarely photographed vehicle was converted to carry a 3.7cm FlaK 37 mounted on its load-bed. Note that the gun's crewmen wear hooded winter parkas with the white side out, while the man in the foreground, gazing through the tripod-mounted binoculars, wears a black Panzer crewman's uniform jacket and padded trousers. This Maultier was powered by a six-cylinder Mercedes-Benz diesel engine that developed 112 hp at 2250 rpm, giving it a road speed of 23 mph and a range of 100 miles. The cargo version could tow a 5-ton load, and weighed 12.7-tons fully loaded.

Crewmen prepare a Panzerwerfer for a fire mission while concealed in a crop field.' This version was designated Sd.Kfz. 4/1 and consisted of an armored Maultier body with a ten-shot 15cm Nebelwerfer-Zehnling 42 launcher mounted on the roof. The tubes could traverse 360-degrees and fire ten 15cm high-explosive or smoke rockets out to about 6900 meters. Ten additional rockets were stored internally.

A close-up of a crewman loading the 15cm launch tubes. Note how the two rockets already loaded have their ends held in place with a small levered device. Also note the small exhaust nozzles placed around the rocket body, as well as the "U"-shaped conduits along the top and bottom edge of the launch tube assembly, which connected the rockets to the electrical firing system.

Another pair of Panzerwerfer crewmen loads the last of ten rockets into the launch tubes. Note the unusual appearance at this late date, of the padded Panzer crewman's beret, apparently in the lighter color associated with Sturmgeschütz crewmen. Also note how the snow on the vehicle's superstructure has been partially cleared away, possibly by the exhaust heat of a previous rocket salvo.

These two men also sport padded berets in the lighter color worn by Sturmgeschütz crewmen. Their launch vehicle has the letter "G" on the sides and rear of the superstructure, which may designate this as "Gustav", the seventh launcher in a battery of eight. Note the weather-stripping above the integral storage lockers, the black-out driving tail-lamp, as well as the pattern of the road wheels and idler wheel.

Panzerwerfer launch vehicle "B", along with two of its mates stands ready to answer a call to fire. Note how all launch tubes face the same direction, the open flap that covered the R.A. 35 sighting optics, and the open driver's visor. There are no weather-strips above the integral storage lockers.

Panzerwerfer launch vehicle "C" is preparing for a fire mission. The crewmen are standing on the open hatches, through which rocket re-loads are being passed. Note the pattern of the idler wheel, which differs from that of Panzerwerfer "G" in a previous photo. Also of interest is the apparent exhaust staining on the superstructure sides, weather-stripping over the side storage lockers and the jerry can wedged behind the forward wheels.

This Panzerwerfer, moving at speed through the snow, shows two items not often seen in use. The first is the MG34, mounted on the driver's compartment roof, while the second is the rod antenna for the internal Fu.Spr.Ger.f. radio, mounted just forward of the right side of the driver's compartment. This vehicle also has weather-stripping over the side storage lockers.

Several Panzerwerfer and a lone Munitionskraftwagen, photographed during a re-supply evolution. Note that the launch tubes of the near Panzerwerfer are trained in a direction that differs from the other vehicles so as to allow easy access to the roof hatches. There is also a heap of packing frames for the 15cm rockets in the left foreground as well as elsewhere in this photo.

This Panzerwerfer met its end due to a collapsed front-end suspension, and other than having been stripped for usable materials, appears to be otherwise intact. Note the compressed spring on the forward suspension bogie, and that the holes on the idler wheels are not completely circular. Finally, the last storage locker is missing. This vehicle also appears to have one long piece of weather-stripping over the storage lockers compared to three discreet strips seen in previous photos. Also note the shipping data stencil on the hull side just above the forward boarding step.

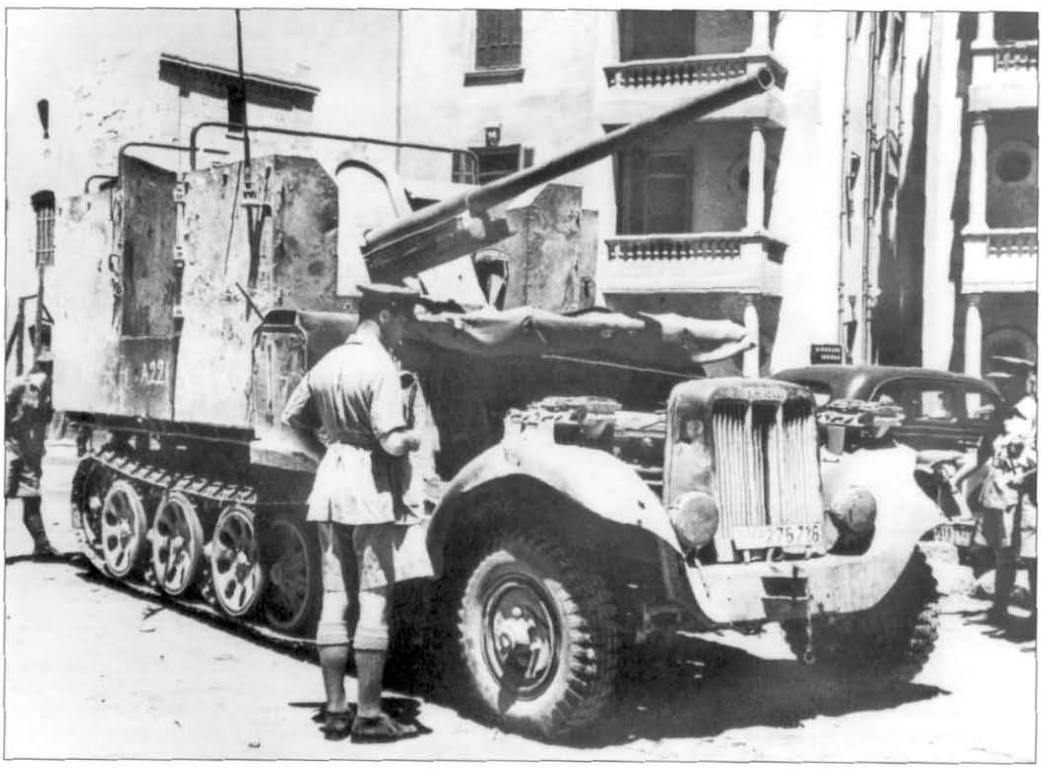
This 5-ton Sd.Kfz. 6 artillery tractor is probably Bulgarian, which is indicated by the registration plate. The "B" prefix is actually a Cyrillic "V", which is followed by a five-digit number. The Bulgarian 1st Armored Brigade was re-equipped by Germany in July of 1943, with Pz.Kpfw. III, Pz.Kpfw. IV, StuG III, and Sd.Kfz. 222 armored cars, as well as artillery assets. This would account for a Sd.Kfz. 6 with these markings. Note also the white markings on the tops of both front fenders, which, unfortunately cannot be seen in their entirety due to the vehicle's position in the photograph.

As this Sd.Kfz. 6 tops a rise, its front wheels typically leave the ground. It has a Pioneer body attached as indicated by the four rows of seats and lack of ammunition storage lockers. This particular vehicle has a Notek lamp fitted as well as conventional covered headlamps. One sure way to identify the Sd.Kfz. 6 is the distinct pattern of its front wheel hub. This is the BN 9 production series body, which was powered by a 6-cylinder Maybach HL54 TURKM gasoline engine producing 116 hp at 2600 rpm. This gave the vehicle a top speed on roads of 31 mph, with a range of 187-miles on a road and 72-miles cross-country.

This Sd.Kfz. 6 has a pioneer body attached as indicated by four rows of seats and lack of rear-side ammunition locker doors. There is no Notek black-out driving lamp fitted and the conventional head-lamps are uncovered. If this photo was taken during or before the French Campaign of May-June 1940, the dark base colors would have been Dunkelgrau Nr. 46 and Dunkelbraun Nr. 45, in a ratio of 2/3 Nr. 46 to 1/3 Nr. 45, in a broad striped or blotched pattern. The tractor's fully-laden combat weight was 9-tons; its length was 21-feet, its width 7.5-feet and its height 8.3-feet.

This Sd.Kfz. 6/2 has a 3.7cm FlaK 36/37 mounted on its load-bed, with the drop-sides folded up for rail transport. It is connected to a Sonderanhänger (special trailer), Sd.Ah. 57, which carried the bulk of the gun's ammunition. Note how the vehicle is secured to the flat-car, using wood blocks and chocks to prevent fore-to-aft, as well as lateral movement; chains are not in evidence.

An Sd.Kfz. 6/2, armed with an un-shielded 3.7cm FlaK 36 negotiates a cobblestone road on its way to the front. This is a Luftwaffe-manned vehicle as evidenced by the "WL" prefix on the otherwise blank rear license plate. Less than 200 were built for the Luftwaffe, with nine issued to each Flakbatterie. The 3.7cm FlaK 37 was a modified FlaK 36 with the addition of a gun shield. Note the gun barrel cleaning staffs stored on top of the near-side folding platform extension, as well as the bucket and other details of the rear end.



Based on the BN9b chassis from Büssing-Nag, nine of these 7.62cm F.K. (r) auf gp. Selbstfahrlafette (Sd.Kfz. 6/3) were built. They were shipped to North Africa, where in March of 1942 they all wound up serving with Panzer-Jäger-Abteilung 605. The users reported that the vehicle's gun was capable of destroying the British Matilda Infantry Tank, but that the overloaded chassis was too slow, and that the armor would not stop a rifle bullet. Unlike later German use of this particular Soviet gun, this piece was not bored out and re-chambered to use PaK 40 ammunition. The extremely awkward arrangement of the gun and its controls made it impossible for the crew to engage moving targets.

A Sd.Kfz. 7 tows a disabled Pz.Kpfw. II Ausf. F onto an improvised bridge spanning a narrow waterway. Both vehicles are marked as belonging to Panzer Regiment 24, of the 24.Panzer-Division, which was destroyed at Stalingrad. In the background, parked (or more likely, stuck) in the water, is a 12-ton Sd.Kfz. 8.

An Sd.Kfz. 7 pulling a 10cm s.K 18 gun. Although the gun's tube appears to be too short and may more resemble the 15cm s.FH 18, it is in fact retracted for transport. The gun and limber's wheels are the less-often seen pressed "star" pattern. The Mittlerer Zugkraftwagen 8-ton Sd.Kfz. 7 was also the prime mover for the 8.8cm FlaK series, as well as the 15cm s.FH 18.

This Sd.Kfz. 7 is also towing what appears to be a 10cm s.K 18 gun; note how the gun tube is retracted and the more common "pierced dish" pattern of gun and limber wheels. A recognition feature of the Sd.Kfz. 7 is the shape of the rear fender and how it relates to the ammo storage locker, as well as the seven holes on the outer road wheels; the Sd.Kfz. 6, 8 and 9 have eight holes on each of their outer road wheels. Note the mass of stowage on the vehicle's rear, the Notek lamp on the far fender, unit insignia of the 23.Panzer-Division on the near fender, and the white fender edges, which were used as an aid in night driving.

A Sd.Kfz. 7 is preceded on a muddy track by a Pz.Kpfw. I and a lorry, with the remainder of a convoy lined up behind it. The KMm 11 version of this vehicle (shown) was powered by a six-cylinder Maybach HL 62 TUK (or HL 64 TR), which developed 140 hp at 2600 rpm. This gave the vehicle a maximum road speed of 31 mph and a range of 156 miles.

A very shabby Sd.Kfz. 7 tows an equally rickety lorry across a river. It is using a tow bar to conduct the operation, while all crewmen do their best to stay dry. The loaded weight of this vehicle was 11.55-tons, its length 22.6-feet, its width 7.91-feet and its height 8.65-feet.

This Sd.Kfz. 7 is towing the components for either a 17cm s.K 18 or 21cm Mörser 18, something for which it was not specifically designed. This was a job normally entrusted to the 12-ton Sd.Kfz. 8. Note that this vehicle is equipped with a Notek black-out driving lamp, between the head-lamp and the grill. Although authorized to be fitted to military vehicles in 1939, these devices were not common until after the French Campaign.

This Sd.Kfz. 7 has its canvas foul weather cover erected for protection against the elements. Note that there are a pair of rod-style grab handles mounted vertically between each row of seats. See the previous photo for an example of a vehicle without this feature.

This photo depicts a group of Germans and some allies (possibly Italian) on board a Sd.Kfz. 7. This heavily-laden vehicle has fuel drums in the last two rows of seats, as well as a group of travelers perched on the rear luggage rack, observing the area ahead of them. This vehicle is in almost new condition with relatively clean paint-work and a still visible shipping data stencil between the first two rows of seats. Note also the cut-outs in the body sides at the edge of each row of seats to aid the men as they climbed aboard.

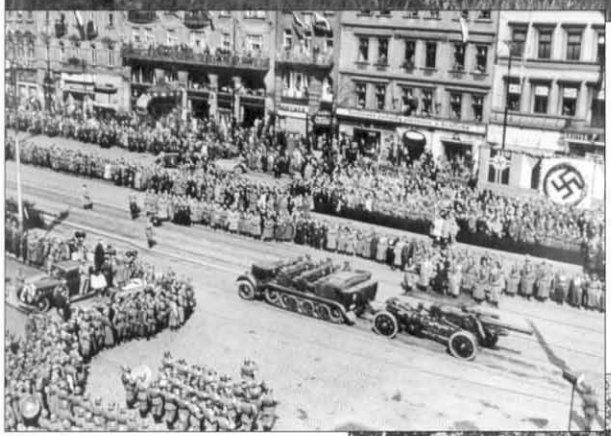
Doing what it does best, an Sd.Kfz. 7 tows a lorry through the mud. Note that this vehicle has a different position for the mount of the Notek black-out driving lamp, although the lamp itself is missing. Also note how the driver's wind-shield has a separate fold-out panel, which is seen here in the raised position.

Tractor "C" pulls its gun alongside a railway line. As the vehicle is relatively pristine and the crew rather clean-looking, it would appear that they are on a training mission. The lack of a Notek black-out driving lamp would place this vehicle early in the war, or what is more likely, pre-war. Note also the rod-style grab handles along its sides, between the rows of seats.

Although these are earlier KMm 10 variants of the Sd.Kfz. 7, these vehicles of a Luftwaffe Flakbatterie (note the "WL" prefix on the license plates) have the Notek black-out driving lamp, which place them in a time frame after the French Campaign of 1940. The main recognition features of the KMm 10s are the shorter (by one pair of outer road wheels) track segment, the different front fenders and the smaller front tires, which were 7.50X20 instead of the later 9.75X20.

This Sd.Kfz. 7 pulls an 8.8cm FlaK 36 or 37 past a Panzerjäger Tiger (P) "Ferdinand". The FlaK gun features the later R.A. 9 multi-section gun tube and is mounted on the Sd.Ah. 203 limber system. Both tractor and gun are painted in a fairly complex camouflage scheme consisting of a "web" pattern created by spraying a lighter color over the darker base color.

A Sd.Kfz. 7 with an armored body ("Gepanzerte 8 ton Zugkraftwagen") pulls a highly modified 8.8cm FlaK 18 on a Sd.Ah. 201 limber. Note the shield configuration, and the very unusual shape of the stabilizing outriggers. These could firmly contact the ground to stabilize the mount while the gun was still on the wheeled carriage. The combination depicted served with Panzer-Jäger-Abteilung 525, 560 and 605, during the French Campaign in 1940.



A German parade featuring an artillery regiment's tractors and guns passes a reviewing stand. The Sd.Kfz. 7 and 15cm s.FH 18 are in near pristine condition, showing how relatively dark the colors of these vehicles actually were.

A KMm 10-bodied Sd.Kfz. 7 pulls an 8.8cm FlaK 18 on a Sd.Ah. 201 limber. The reels on the trailer held cables that connected the gun to a Flak battery's Kommando Gerät (Kdo.Ger.) central fire control device. Note the unit insignia on what is very likely a Luftwaffe-manned tractor, the white-painted edges of the rear end of the hull, and the brake line running to the gun from the tractor.

A late-war variant of the Sd.Kfz. 7 pulls part of a 17cm s.K 18 or 21cm Mörser 18, followed by an Sd.Kfz. 8, pulling another part of the ordnance. This vehicle features a wooden load-bed and a mottled camouflage. Strictly speaking, this tractor was not rated for the load it is towing.

This Sd.Kfz. 7 is pulling an 8.8cm FlaK 18 on a Sd.Ah. 201 limber. It features rod-style grab handles attached to the areas between the seat rows and a non-standard tarp rigged over the driver's compartment. The rear is heaped with stowage, while there are two milk cans jammed in between the front fenders and the engine compartment. This tractor also mounts a Notek black-out driving lamp, in-board of the conventional head-lamp.

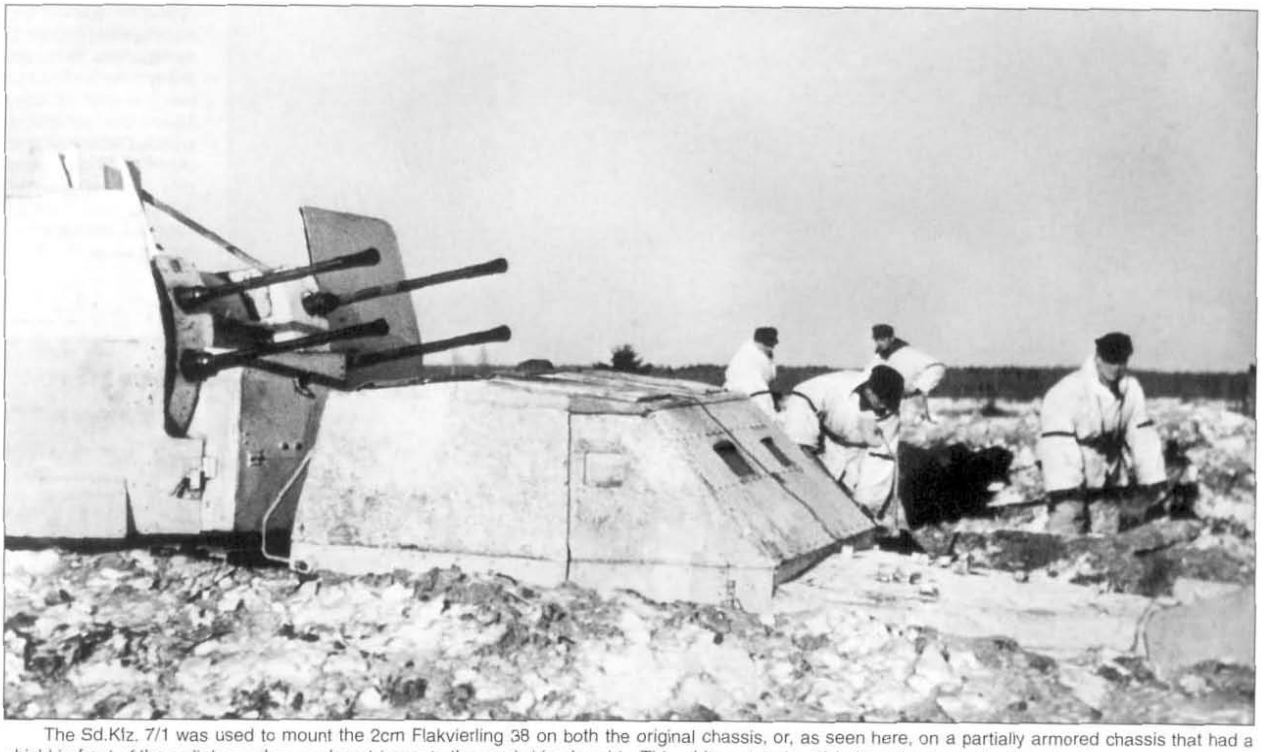
A relatively fresh-looking Sd.Kfz. 7 pulls a rather scruffy veteran 8.8cm FlaK 36/37 on a Sd.Ah. 203 limber. Note the score on the gun's shield and the R.A. 9 sectional gun tube. The tractor is in the base color of Dunkelgelb RAL 7028, and also sports a shipping stencil between the first and second rows of seats. The boarding handles are cut into the vehicle's sides while the Notek lamp is mounted on the fender over the front wheel.

While a member of another gun's crew looks on, this Sd.Kfz. 7 rolls past, pulling an 8.8cm FlaK 18 mounted on a Sd.Ah. 201 limber. The ammunition boxes in the foreground are an indication of what work the crew of the passing vehicle has to look forward to, once they are similarly positioned. Note the Luftwaffe-style eagle on the helmet at center and the Bergmann machine-pistol between the two helmets to the left of center, next to the stack of uniform items and mess gear. The tractor has rod-style grab handles and does not mount a Notek lamp.

A pair of motorcyclists and a light car stand aside as an Sd.Kfz. 7 and its load, an 8.8cm FlaK 18 on a Sd.Ah. 201 limber speed by. Note the cloud of dust being raised and the crewman leaning out of the last row of seats, giving a traffic signal to the following vehicles. Again, the vehicle is crowded with men and stuffed full of their gear. This 8-tonner has the rod-style grab handles mounted between the rows of seats.

In absolutely miserable winter weather, this Sd.Kfz. 7 is pulling a 15cm s.FH 18 up an incline. It is followed by two logistics trucks as well as a second tractor/gun combination. Note the position of the Notek lamp and the fitting of the foul weather cover over the crew compartment. The howitzer has the more common pierced, dish-style wheels on the carriage and limber.

This Sd.Kfz. 7, pulling a 15cm s.FH 18, crosses a river on a pontoon bridge previously constructed by members of a Pioneer Brukenkolonne (Engineer Bridging Column). Next to it, the original civilian bridge that was partially destroyed is being used for lighter vehicular traffic, in this case what appears to be a Henschel 33D1 truck. The tractor has no Notek lamp mounted, while the howitzer has the pierced, dish-style wheels on the carriage and limber.



The Sd.Kfz. 7/1 was used to mount the 2cm Flakvierling 38 on both the original chassis, or, as seen here, on a partially armored chassis that had a shield in front of the radiator and an enclosed (open to the rear) driver's cabin. This white-painted vehicle has also been dug in to the frozen ground while it awaits the next enemy onslaught. This dual-purpose mount was devastating against infantry in the open and was also much feared by the crewmen of low-level ground-attack aircraft.

The other anti-aircraft weapon mounted on the 8-ton chassis was the 3.7cm FlaK 37, or its improved version, the 3.7cm FlaK 43. Here a derelict Sd.Kfz. 7/2 with its gun pointed towards its rear is passed by a truck of the Red Army. Note the mottled camouflage, the obscured legend on the armored radiator shields, the Notek lamp and the unusually small conventional headlamps.

Some 12-ton halftracks were armed with a modified 8.8cm FlaK 18 guns, given an armored cab, and designated "8.8cm FlaK 18 Sfl. Auf 12 ton Zugkraftwagen". They carried a modest basic load of ammunition and were initially designed to lay direct fire onto enemy bunkers. Later they were also used in an anti-tank role by 1.schwere Kompanie/Pz.Jg.Abt. 8. Modifications to the gun mount, some of which can be seen here on this destroyed example, included deletion of anti-aircraft sights and central fire-control data transmission apparatus, as well as the addition of a shield. The opposite side of the shield had a locker attached to it, which held 8.8cm ready rounds.

An intact 8.8cm FlaK 18 Sfl. Auf 12 ton Zugkraftwagen awaits an order to move. Note the cover on the 8.8cm gun's breech and the sparse vegetation used as a half-hearted attempt at camouflage. A close examination of the relationship of the rear of the gun, the pedestal and the vehicle's floor, will reveal one of the fallacies surrounding this gun: that it was a dual-purpose anti-aircraft and anti-tank vehicle. The gun could only elevate +15-degrees, and also had limited movement in azimuth of 151-degrees left or right of the vehicle's centerline; therefore it could not engage aerial targets.

This Sd.Kfz. 8, with an artillery tractor body, pauses behind a German trench-line, manned by a pair of SS troops (note the part of the eagle that shows on the far soldier's shoulder). Behind the tractor is a Pz.Kpfw. III from the 4.Kompanie of a Panzer Regiment. From this distance and at this angle, the easiest way to identify this tractor as a Sd.Kfz. 8, is by the pattern of the idler wheel.

A Sd.Kfz. 8 with an artillery tractor body carries a full load of troops. Note the framework for the canvas roof, the canvas covers for the openings between the rows of seats, and the white-painted front fender rim. The DB10 production version (shown here) was powered by a Maybach HL85 TUKRM gasoline engine, which produced 185 hp at 2600 rpm. The maximum speed on roads was 31 mph, with a range of 156 miles. Cross-country range was 62 miles.

The Sd.Kfz. 8 weighed 14.7-tons, combat loaded, was 24.18-feet long, 8.25-feet wide and 9.15-feet high. Here, an artillery tractor uses a long bar to tow an Opel Blitz along a soggy forest track. Note how the canvas roof sits, the rear doors for the ammo lockers and the body-work beneath the lockers; these are all recognition features of this particular half-track. Note also the Panzer rhomboid and "W" marking on the far corner of the vehicle's rear.

Twelve British/Commonwealth troops (and one very lucky dog!) go for a test-ride on a captured Sd.Kfz. 8 artillery tractor. Note the camouflage, which consisted of blotches and small spots of darker colors over the base color of Dunkelgelb RAL 7928. Like some versions of the smaller Sd.Kfz. 7, this vehicle also features cut-outs for hand holds on the body panels situated between the rows of seats.

A smiling German officer enjoys himself, while the troops on the ground appear to be either trying to push this Sd.Kfz. 8 forward, or prevent it from slipping sideways. Whatever they are attempting, the troops don't seem to be enjoying any of it. Note the width indication stems on the fenders, the position of the Notek black-out driving lamp, and the viewing cut-out in the canvas, which covers the wind-shield.

It is easy to confuse the Sd.Kfz. 8 with its smaller stable-mate, the Sd.Kfz. 7 at a distance, as they both have three rows of seats and ammunition lockers at the rear. However, the ammunition lockers on the Sd.Kfz. 8 are completely above the fender line, as seen here, while the lockers on the '7 curve down to end below the top of the fenders. Note also the half-moon shape of the recess around the handle on the ammo locker's side doors and the folded-up rear mud flap.

Mightiest of all German half-tracks was the massive Sd.Kfz. 9, seen here pulling its associated Sd.Ah. 116, which was a 24-ton capacity tank-transporter trailer. Note the tiny Panzer rhomboid on the front fender of this relatively clean vehicle. The Famo-produced F3 chassis was powered by a Maybach HL 108 TUKRM 12-cylinder gasoline engine developing 250 hp at 2600 rpm. Top speed was 31 mph on roads, while range on roads was 161 miles.

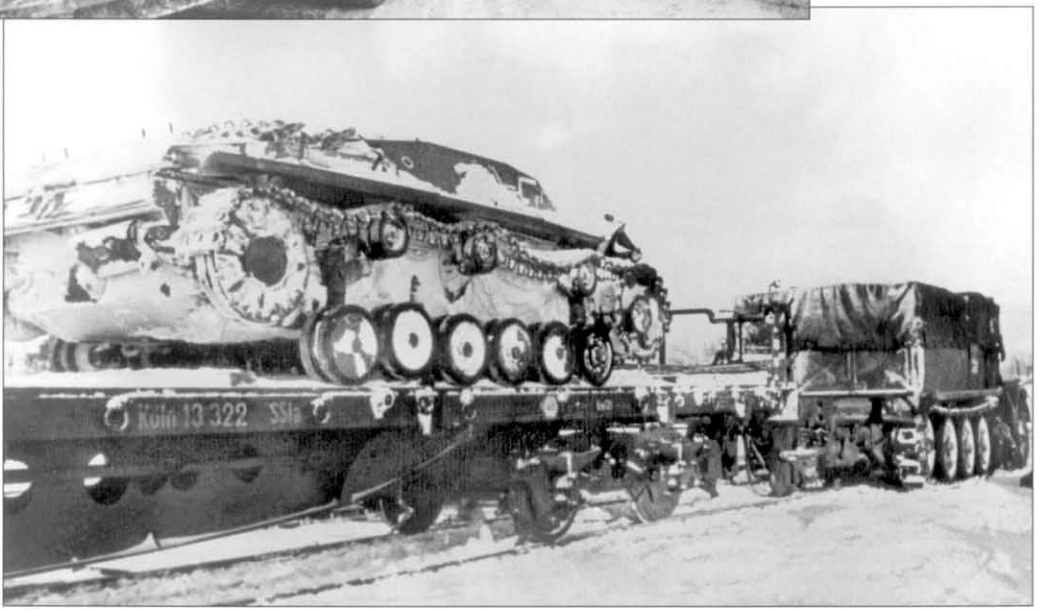
A Famo "Bulle" (Bull) lends a helping hand as a crew of a Pz.Kpfw. IV Ausf. H from the 8.Kompanie of a Panzer Regiment's II.Abteilung works on their tank's tracks. These half-tracks were highly prized for their power and their extreme versatility. The combat-loaded weight of the Sd.Kfz. 9 was 18-tons, length was 27.21-feet, width was 8.59-feet and height was 9.4-feet.

This Sd.Kfz. 9 is pulling a disabled Pz.Kpfw. III Ausf. N to a workshop, where it will be repaired and returned to combat. The Famo was equipped with tow bars (seen here attaching the tractor to the Panzer), a 40-ton capacity winch, pulleys, cables, blocks and a variety of other tools for its prime task of tank recovery. Some Famos had a spade fitted to their rear to allow for more pulling power when attempting to extricate a disabled or otherwise bogged-down armored vehicle.

In this image, a Famo from s.Pz.Abt. 508 attempts to recover a Tiger I, as part of a "train" of recovery half-tracks (note the cable running from the tractor's front to what is probably another Famo), on an Italian road. Note also that this is the later body style with squared-off fenders and a tubular bumper up front. The entire drama unfolds under the watchful gaze of an escorting Pz.Kpfw. II Ausf. F.

A Famo pulls a Sd.Ah. 116 tank-transporter trailer, which carries a Pz.Kpfw. IV (probably an Ausf. G) of the 3.Kompanie of a Panzer Regiment's I.Abteilung, as denoted by the Tac numbers on the turret schützen. Note the man wearing short pants and a sweater, to the right, while the trailer's steersman is wearing a greatcoat.

Displaying its versatility, this Famo is being used as a surrogate locomotive to pull a railroad flat car loaded with an early StuG III through the snow. From this angle, the Sd.Kfz. 9 is easily identified by the three rear panels of its load-bed, with their characteristic "X"-shaped stiffening ribs. There is a white square painted on the forward superstructure of the StuG III, which otherwise is missing part of its tracks.



An Sd.Kfz. 10 pulls a piece of ordnance along a road adjacent to a rail line. Note the non-standard wooden structure behind the driver and the pattern of the cut-outs on the road wheels. The foliage camouflage makes it impossible to tell if the gun is a 5cm PaK 38 or a 7.5cm PaK 40, a fairly typical load. However, neither type has a hand-wheel on the right side of the mount (as seen here), nor does the PaK 97/38.

This Sd.Kfz. 10 pulls a trailer consisting of a launcher for 28cm or 32cm Wurfrahmen un-guided rockets, across a river. Note a rocket in its crate, lying across the trailer, as well as the circular unit marking on the front fender of the tractor. The "necklace"-like item hanging in front of the radiator is a string of spare rubber track pads.

A well camouflaged Sd.Kfz. 10 pulls a 5cm PaK 38 past a tired group of "Landsers". The PaK 38 can be identified at this angle by the way the lower lateral shields are interrupted by the main curved shield. The Sd.Kfz. 10, from the D7 chassis onwards, was powered by a Maybach HL42 TRKM 6-cylinder gasoline engine that developed 100 horsepower at 2800 RPM. This gave it a top speed of 40 mph, and a range on roads of 217 miles.

This Sd.Kfz. 10 has a camouflage scheme consisting of a lighter color brushed on in short strokes over its base paint, as can be seen below the radiator grill. Note the empty Notek lamp mount and the unusually uncluttered appearance of the tractor. The gun is a 7.5cm PaK 40, which can be identified by the shield configuration as well as the wheels with eight spokes. Modelers should note that the PaK has covers on the breech and the muzzle brake.

A Sd.Kfz. 10 pulls a 3.7cm PaK 36 up a rather steep embankment. Note the large white number "12" on the front fenders and the rear of the superstructure. The windshield has a canvas cover to eliminate reflections, while the road wheels are of the "first" pattern. There is no Notek lamp fitted. The PaK sports a small cap for the muzzle and there is a brake line that can be seen hanging down below the tubular trail arms.

A Sd.Kfz. 10 at rest. Note the framework for the canvas foul weather roof, the jerry can and rack, and that the pattern of the road wheels (for convenience referred to as "second" pattern) differ from the "first" pattern seen on an earlier photo in this section. The D7's loaded weight was 4.9-tons, while its basic dimensions were: 15.5-feet long, 6-feet wide and 5.78-feet high.

This well-camouflaged Sd.Kfz. 10 has the second pattern road wheels and carries an infantry section garbed in camouflage clothing. Note also that there is a structure behind the driver's compartment similar to that seen in an earlier photograph.

Covered in mud and wounded troops, this Sd.Kfz. 10 makes its way towards a medical facility. Note the Feldgendarme with his distinctive Gorget. This badge of authority earned these men the nick-name of "Chained Dogs". Both he, and the men on the half-track, can be identified as SS troops by their collar devices and lack of breast eagles on their uniform tunics.

Vehicles of the 2.Panzer-Division in the advance. This impressive display of mechanized might includes a pair of Sd.Kfz. 10s as well as a line of Pz.Kpfw. III Ausf. Js. The leichter Zugkraftwagen has a Notek lamp fitted and a Nazi flag for air recognition on the engine hood. That, and the fact that the Pz.Kpfw. IIIs are Ausf. Js, would place this scene on the Russian Front. The Pz.Kpfw. III Ausf. J can be identified by the Kugelblend 50 (ball mount for 50mm-thick armor plate) and the Fahrersehklappe 50 (driver's visor for 50mm-thick armor plate) on the superstructure front plate.

This Sd.Kfz. 10 with first pattern wheels demonstrates its obstacle climbing abilities, by surmounting a pile of logs while pulling a Sd.Ah. 32 trailer. Note the pattern of the front fenders and the cylindrical device between the front wheels and the remainder of the body. These features identify this vehicle as an earlier D6 developmental vehicle, which was powered by a Maybach NL38 TRKM six-cylinder engine with an output of 83 hp.

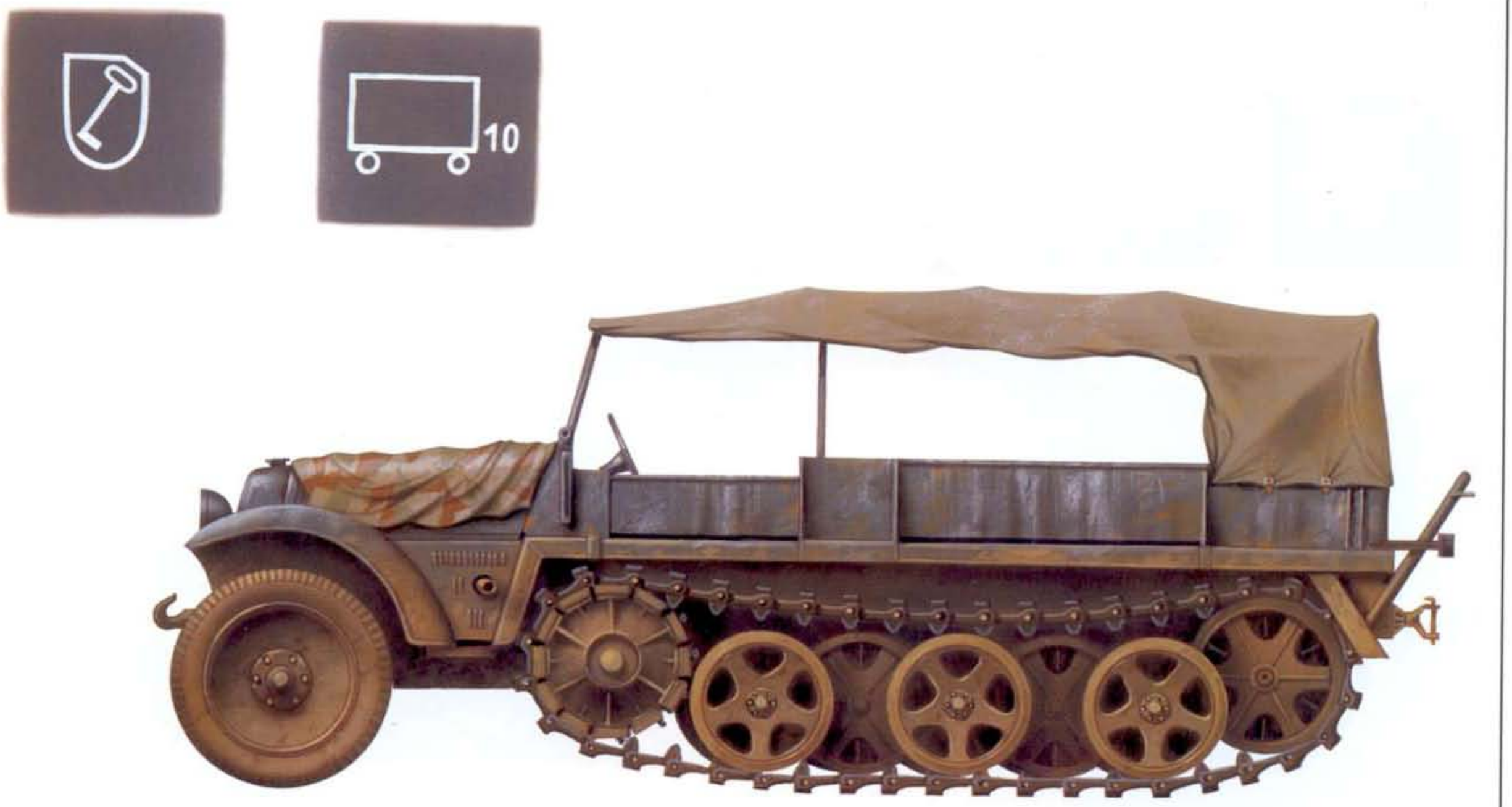
This Sd.Kfz. 10/5 has the second pattern road wheels, as well as a Notek lamp and enclosed rifle racks on the fenders. The 2cm FlaK 38, which is identified by the circular trunnions and the shape of the gun tube's flash suppressor, does not have shields fitted. From the looks of the terrain and the men's clothing, this vehicle is stationed somewhere adjacent to the Mediterranean Sea.

Dispersed in the open, the crew of this Sd.Kfz. 10/4 are working around their ammunition trailer, apparently unconcerned by any likelihood of the enemy making an appearance. The gun is the 2cm FlaK 30, which, from this angel can be identified by the shape of its shields and the configuration of its gun tube.

This Sd.Kfz. 10/4 has some unusual features, most noticeably a large rack hanging in front of the radiator grill. It features second pattern road wheels and lacks rifle racks. The 2cm FlaK 30 is also unusual in that it has a net attached to catch spent shell casings, something more often seen on the FlaK 38.

Armed with a shielded 2cm FlaK 30, this partially armored Sd.Kfz. 10/4 and its Sd.Ah. 51 trailer, along with a weary crew, take their rest. Note the spare magazine containers on the drop-sides as well as ammunition boxes on the platform below the gun mount. The FlaK 30 had a practical rate of fire of 120 rounds-per-minute, with a maximum horizontal range of 4800 meters. The gun's effective ceiling was 2000 meters, due to the fact that tracer rounds burned out at that distance.

Another Sd.Kfz. 10/4 with 2cm FlaK 30 pulls a Magirus truck (note the logo on the face of the radiator) along a track. The sides of the vehicle are folded up, the road wheels are of the first pattern and the rifle racks are not covered. There is a Notek lamp fitted and the driver's windshield is encased in canvas to prevent its reflection from attracting the attention of the enemy.

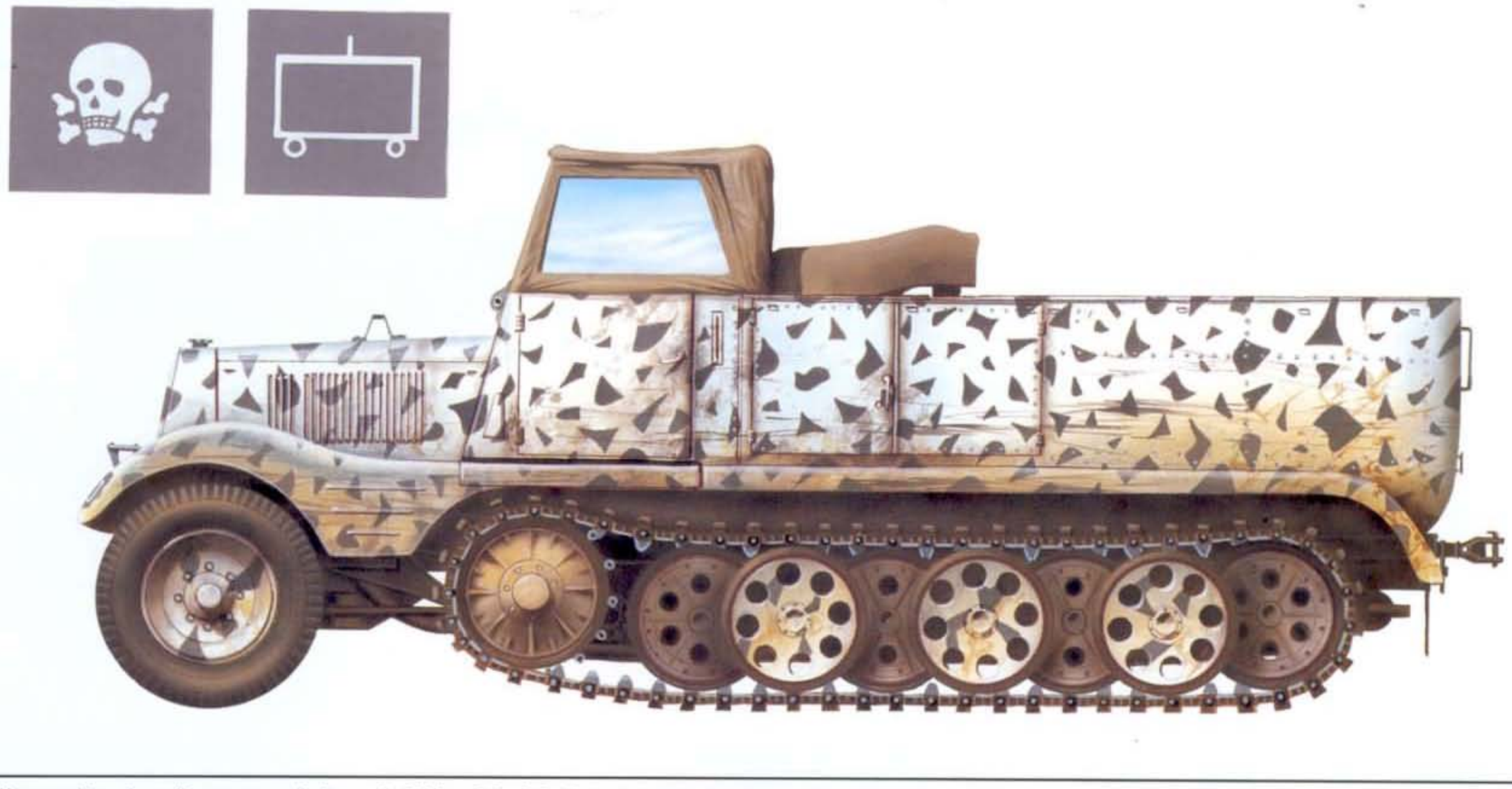


Leichter Zugkraftwagen 1-ton, Sd.Kfz. 10, SS-Panzergrenadier Regiment 1, SS-Panzergrenadier-Division "Leibstandarte SS Adolf Hitler", Kharkov, Soviet Union, March 1943

This vehicle is painted in overall Dunkelgrau RAL 7021 and is marked with the "key" insignia of the division, as well as a tactical sign for a motorized rifle company, in white.

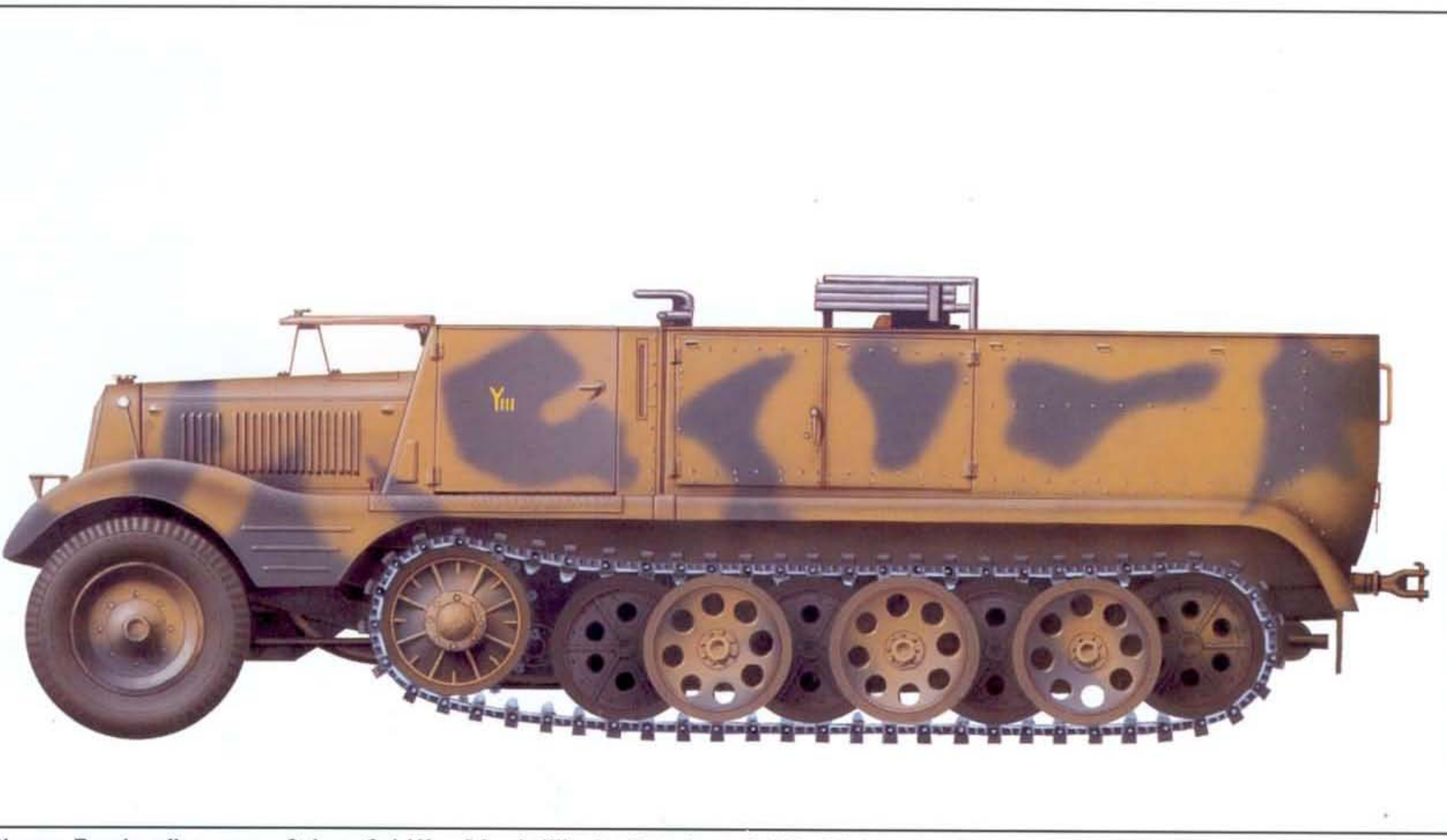
Leichter Zugkraftwagen 1-ton, Sd.Kfz. 10, SS-Panzergrenadier Regiment 1, SS-Panzergrenadier-Division "Leibstandarte SS Adolf Hitler", Kursk, Soviet Union, July 1943

This vehicle is painted in a base color of Dunkelgelb RAL 7028, with over-sprayed patches of Olivgrun RAL 6003 and Rotbraun RAL 8017. The "key" insignia now has oak leaves added.



Mittlerer Zugkraftwagen 3-ton Sd.Kfz. 11, SS-Panzergrenadier Regiment 6, SS-Panzergrenadier-Division "Totenkopf", Kharkov, Soviet Union, March 1943

This vehicle is painted in overall Dunkelgrau RAL 7021, covered with a brush-applied white-wash. It is marked with the "death's head" insignia of the division, as well as a tactical sign for a motorized rifle company, in white. On 26 February 1943, the division's commander, SS-Obergruppenführer Theodor Eicke was shot down in an aircraft and killed. SS-Panzergrenadier Regiment 6 then took on the honorific title of "Theodor Eicke".



Mittlerer Zugkraftwagen 3-ton Sd.Kfz. 11, Artillerie Regiment 90, 10.Panzer-Division, Tunisia, December 1942-May 1943

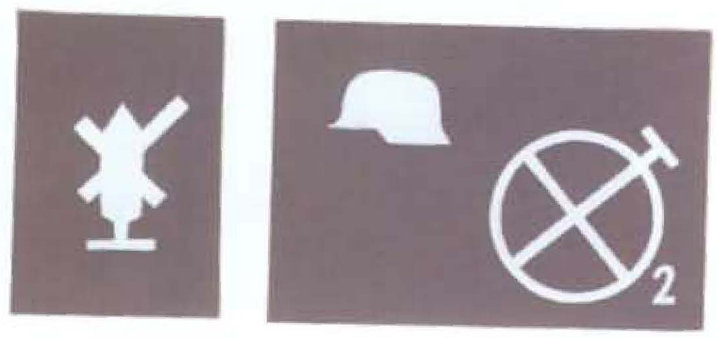
This vehicle has Braun RAL 8020 over-sprayed, leaving patches of the original Dunkelgrau 7021 showing through. The division's insignia, an upright "Y" with three small vertical strokes next to its base is painted onto the original vehicle color in yellow. The 10th was the third German Panzer Division to be committed to the fighting in North Africa, as part of Rommel's Panzerarmee Afrika.

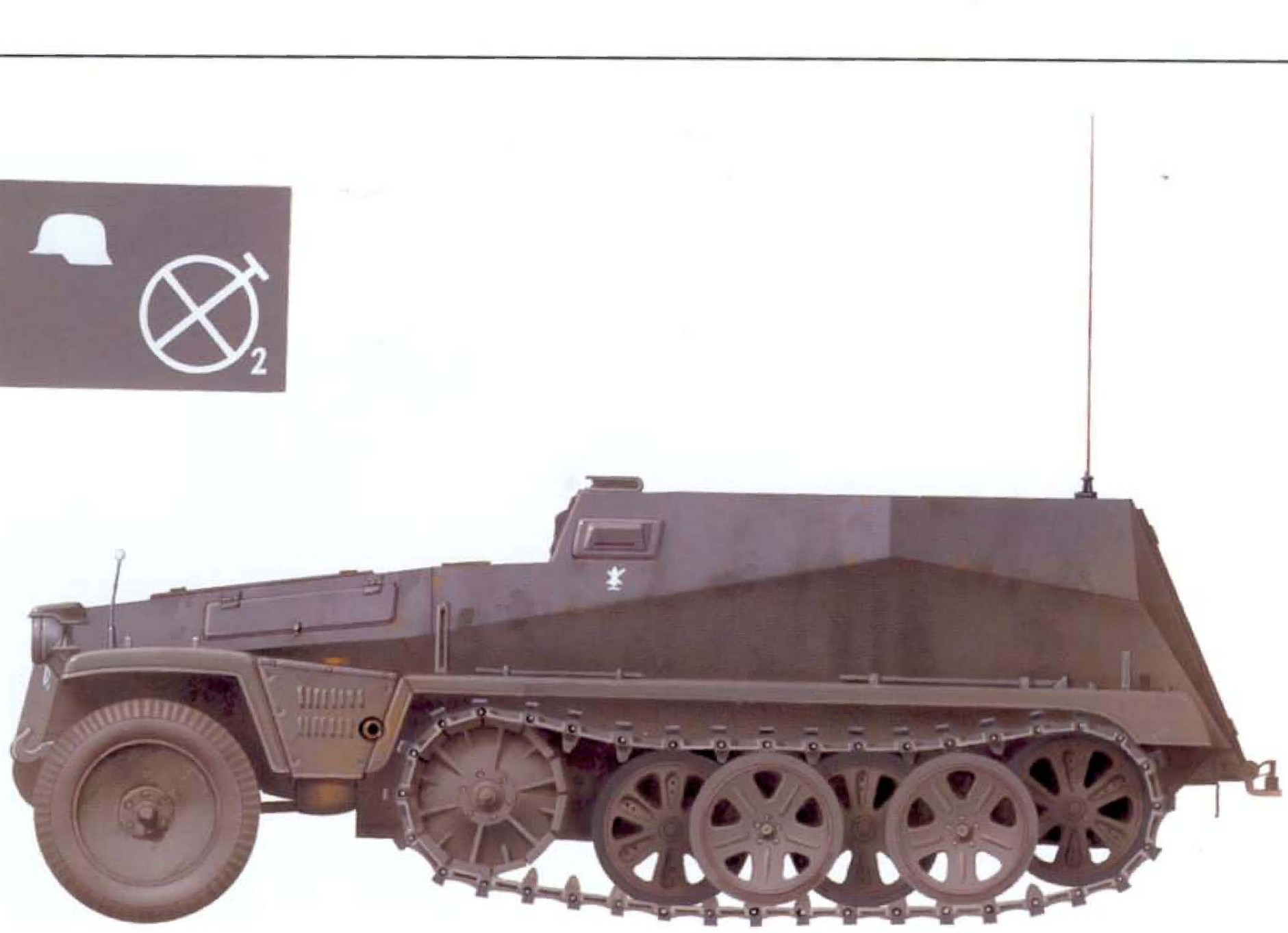
Mittlerer Zugkraftwagen 3-ton Sd.Kfz. 11, Panzer Artillerie Regiment 92, 20.Panzer-Division, East Prussia, November, 1944

This vehicle is painted in a base color of Dunkelgelb RAL 7028, with over-sprayed bands of Olivgrun RAL 6003 and Rotbraun RAL 8017. The divisional insignia, a vertical arrow piercing a curved line (variations had a straight line) is in yellow, while the tactical sign for a motorized howitzer battery, is in white.

Leichter Schützenpanzerwagen Sd.Kfz. 250/1 Ausf. A, Artillerie Regiment 155, 21.Panzer-Division, Afrika Korps, Libya, 1941

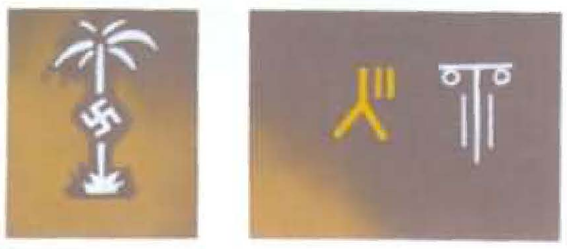
This vehicle is finished with either Gelbbraun RAL 8000 or Graugruen RAL 7008 over-sprayed on top of the original Dunkelgrau 7021 in a few places, notably the vehicle's front end. It has the Afrika Korp's unit insignia of swastika and palm tree, above the tactical sign for a towed howitzer battery, in white.

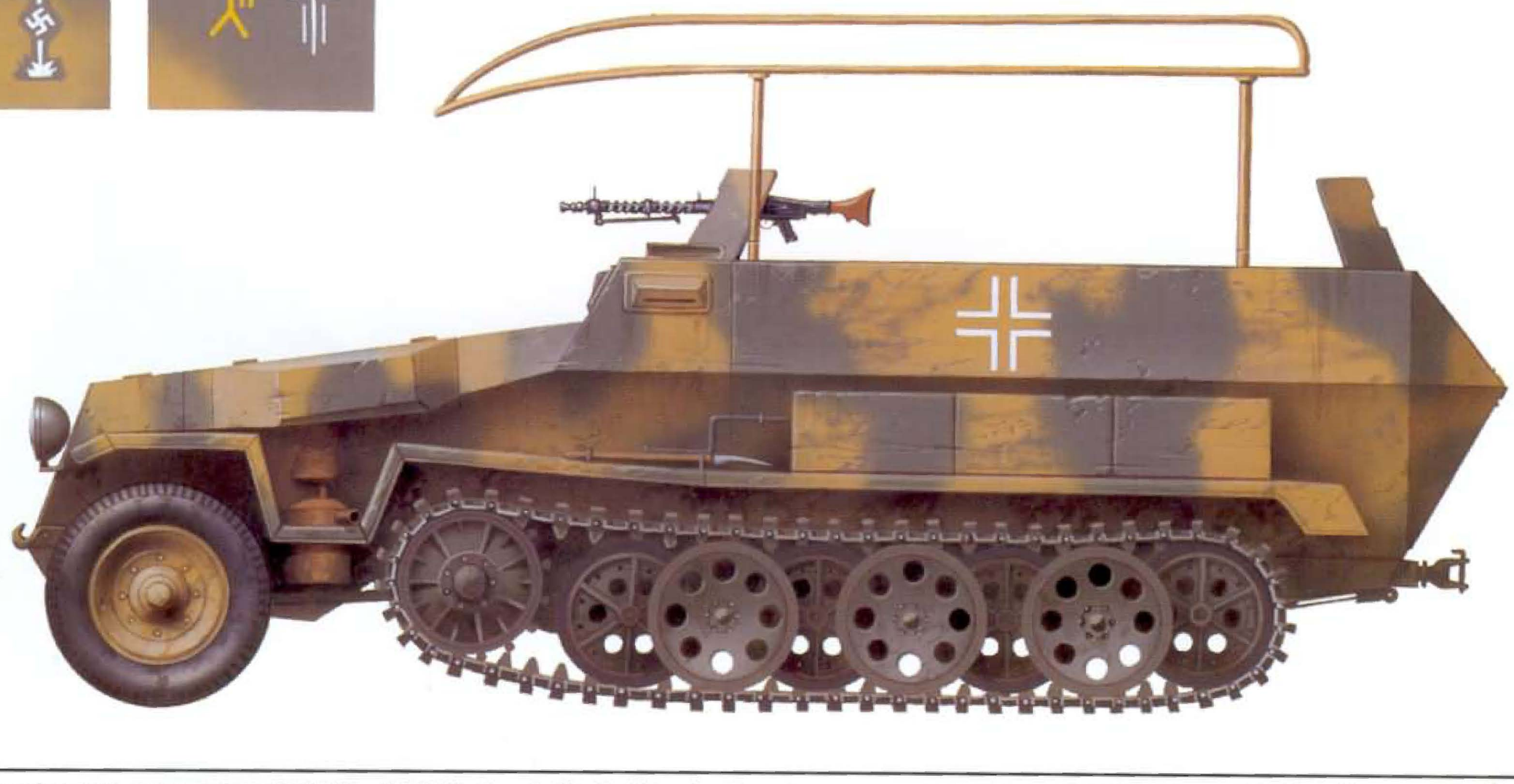




Leichter Schützenpanzerwagen Sd.Kfz. 250/1 Ausf. A, Panzer-Aufklärung-Abteilung "Großdeutschland", Panzergrenadier-Division "Großdeutschland", Heeresgruppe Süd, Soviet Union, Summer 1942

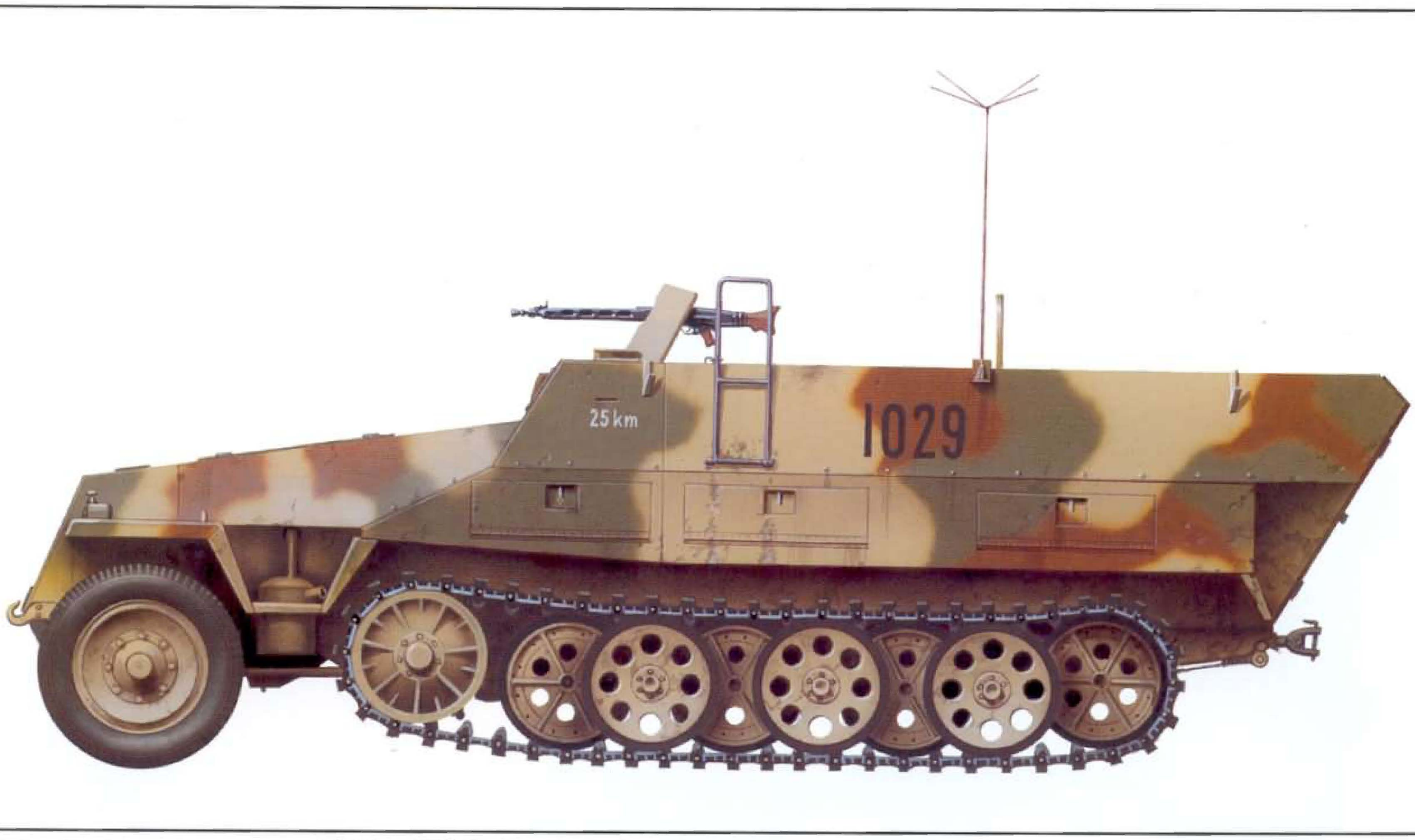
This vehicle is painted in overall Dunkelgrau RAL 7021 and is marked with the white "Stahlhelm" (steel helmet) insignia of this elite Heeres (Army) formation. The tactical marking represents a motorcycle reconnaissance company, while the "windmill" (seen on many other vehicles of this unit) seems to be an un-official battalion insignia; both are in white.





Mittlerer Funkpanzerwagen Sd.Kfz. 251/3 Ausf. C, Artillerie Regiment 155, 21.Panzer-Division, Afrika Korps, Libya, 1941

This vehicle is finished with either Gelbbraun RAL 8000 or Graugruen RAL 7008 over-sprayed on top of the original Dunkelgrau 7021, in broad bands. It has the Afrika Korp's unit insignia consisting of a swastika and palm tree, above the tactical sign for a towed howitzer battery, in white. The unit insignia of the 3.Panzer-Division (an inverted "Y" with two vertical strokes towards the top), to which this vehicle originally belonged, is in yellow.

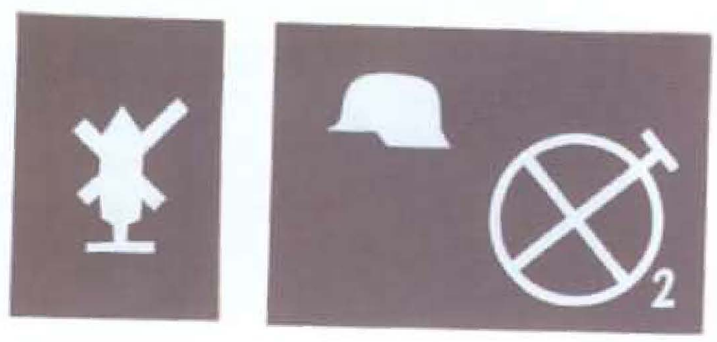


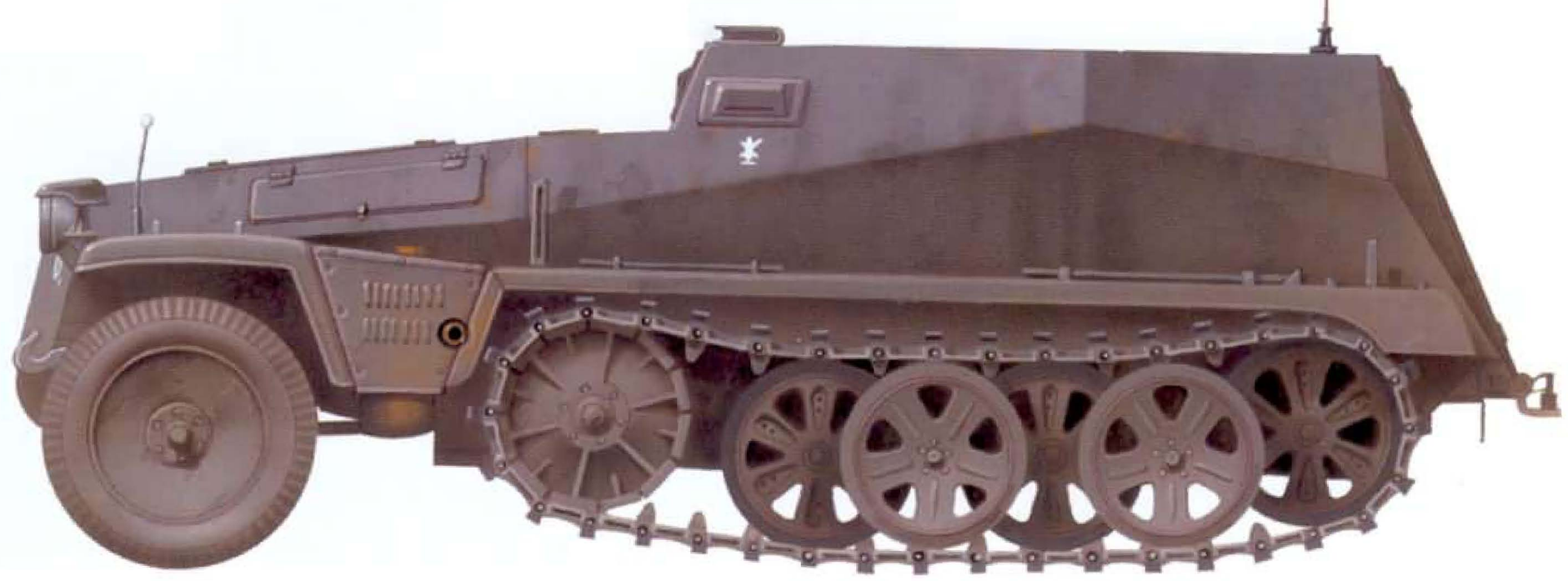
Mittlerer Funkpanzerwagen Sd.Kfz. 251/3 Ausf. D, Panzergrenadier Regiment 6 or 7, 7.Panzer-Division, Gdynia, Poland, March 1945

This vehicle has a base coat of Dunkelgelb RAL 7028, with broad over-sprayed bands of Olivgrun RAL 6003 and Rotbraun RAL 8017. The tactical number denotes the 10.Kompanie and is in black.

Mittlerer Schützenpanzerwagen Sd.Kfz. 251/1 Ausf. D, Panzergrenadier Regiment 33, 4.Panzer-Division, Poland, July 1944

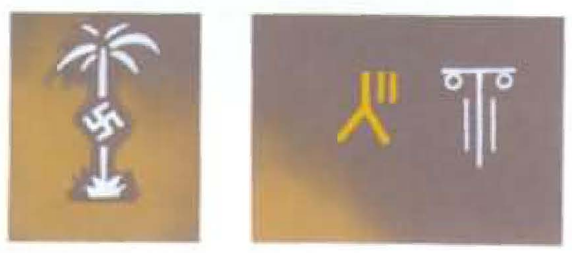
This vehicle has a base coat of Dunkelgelb RAL 7028, over-sprayed with a "web" pattern of Olivgrun RAL 6003. The tactical number denotes the 9.Kompanie and is in black, with a white outline.

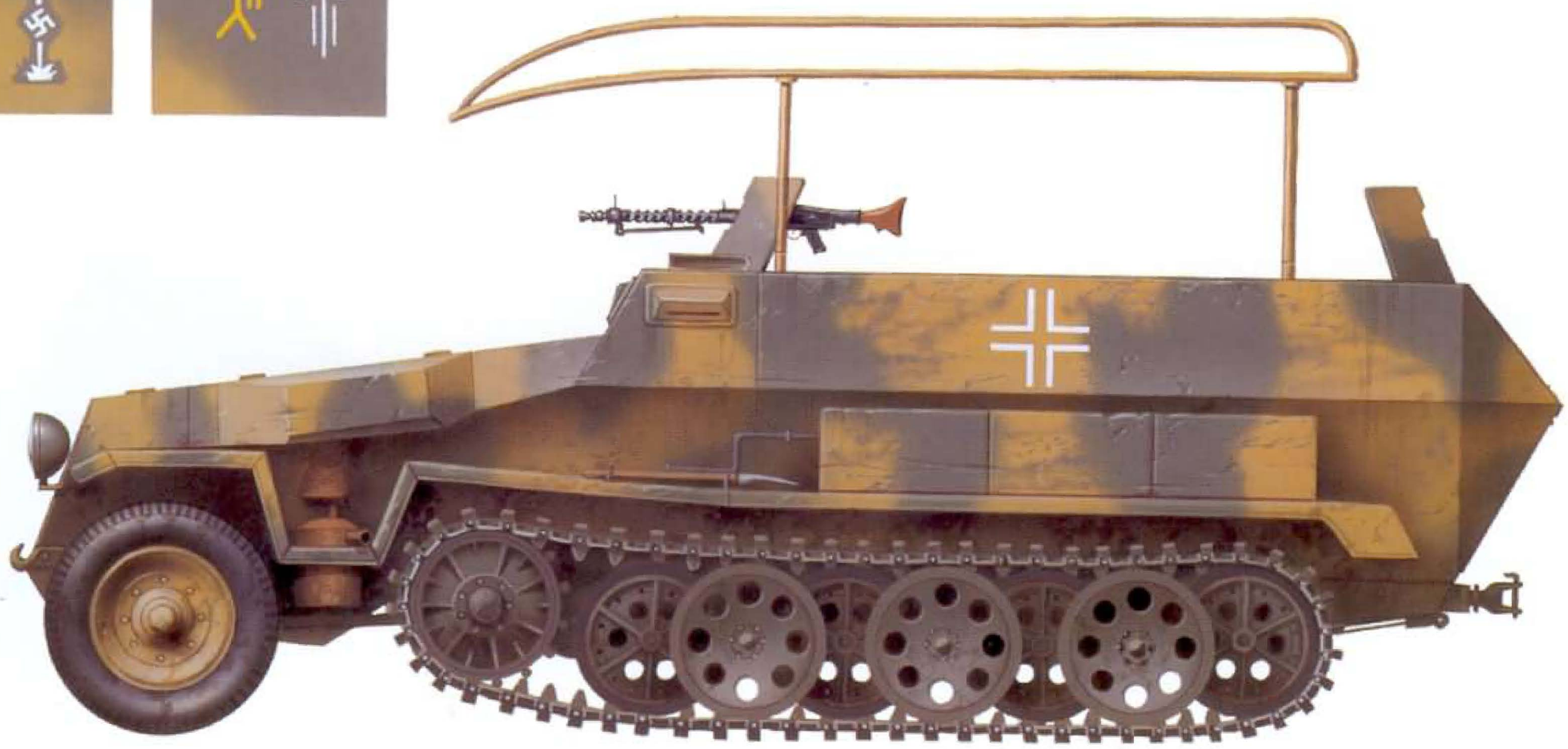




Leichter Schützenpanzerwagen Sd.Kfz. 250/1 Ausf. A, Panzer-Aufklärung-Abteilung "Großdeutschland", Panzergrenadier-Division "Großdeutschland", Heeresgruppe Süd, Soviet Union, Summer 1942

This vehicle is painted in overall Dunkelgrau RAL 7021 and is marked with the white "Stahlhelm" (steel helmet) insignia of this elite Heeres (Army) formation. The tactical marking represents a motorcycle reconnaissance company, while the "windmill" (seen on many other vehicles of this unit) seems to be an un-official battalion insignia; both are in white.





Mittlerer Funkpanzerwagen Sd.Kfz. 251/3 Ausf. C, Artillerie Regiment 155, 21.Panzer-Division, Afrika Korps, Libya, 1941

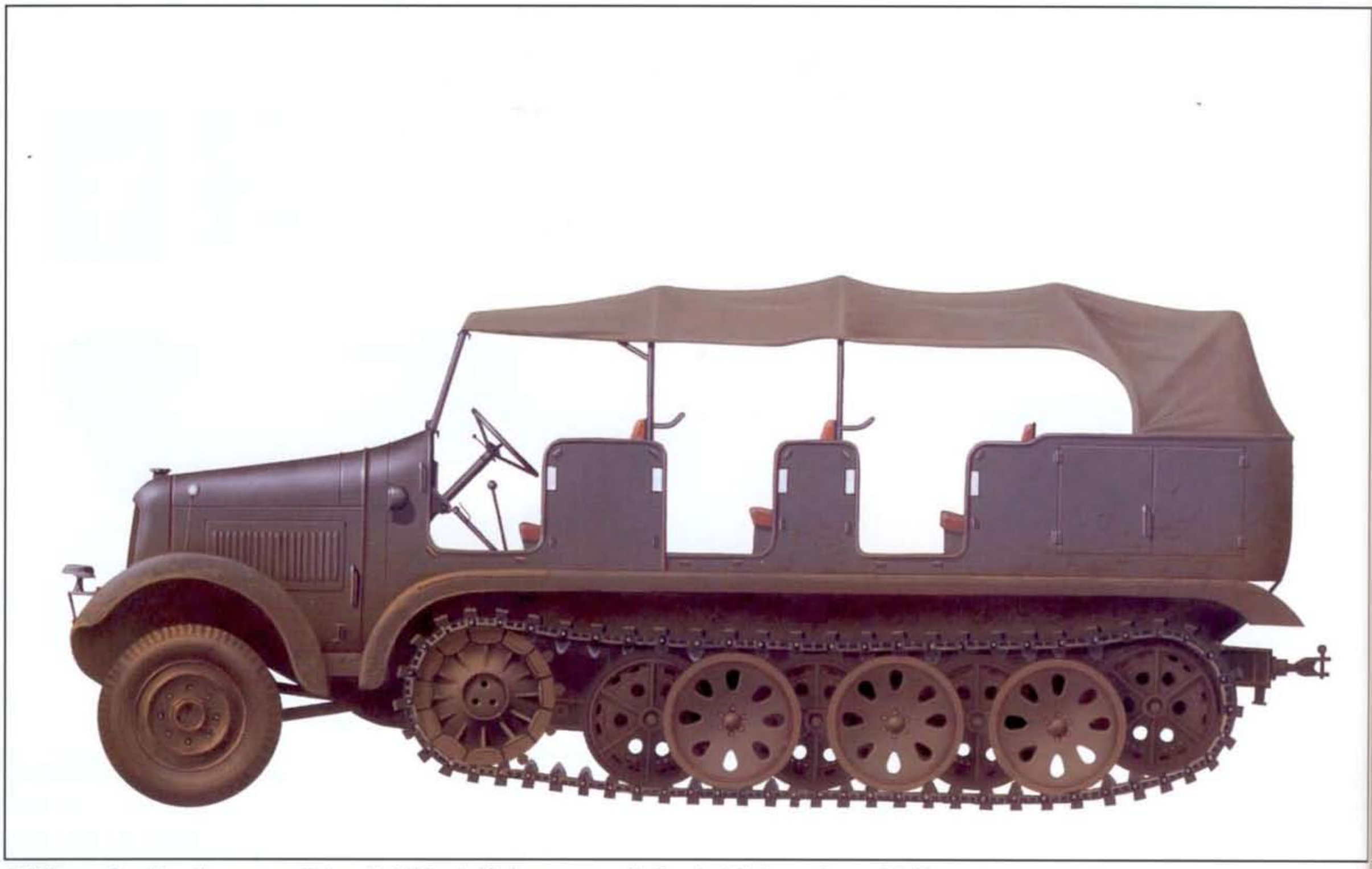
This vehicle is finished with either Gelbbraun RAL 8000 or Graugruen RAL 7008 over-sprayed on top of the original Dunkelgrau 7021, in broad bands. It has the Afrika Korp's unit insignia consisting of a swastika and palm tree, above the tactical sign for a towed howitzer battery, in white. The unit insignia of the 3.Panzer-Division (an inverted "Y" with two vertical strokes towards the top), to which this vehicle originally belonged, is in yellow.

Mittlerer Funkpanzerwagen Sd.Kfz. 251/3 Ausf. D, Panzergrenadier Regiment 6 or 7, 7.Panzer-Division, Gdynia, Poland, March 1945

This vehicle has a base coat of Dunkelgelb RAL 7028, with broad over-sprayed bands of Olivgrun RAL 6003 and Rotbraun RAL 8017. The tactical number denotes the 10.Kompanie and is in black.

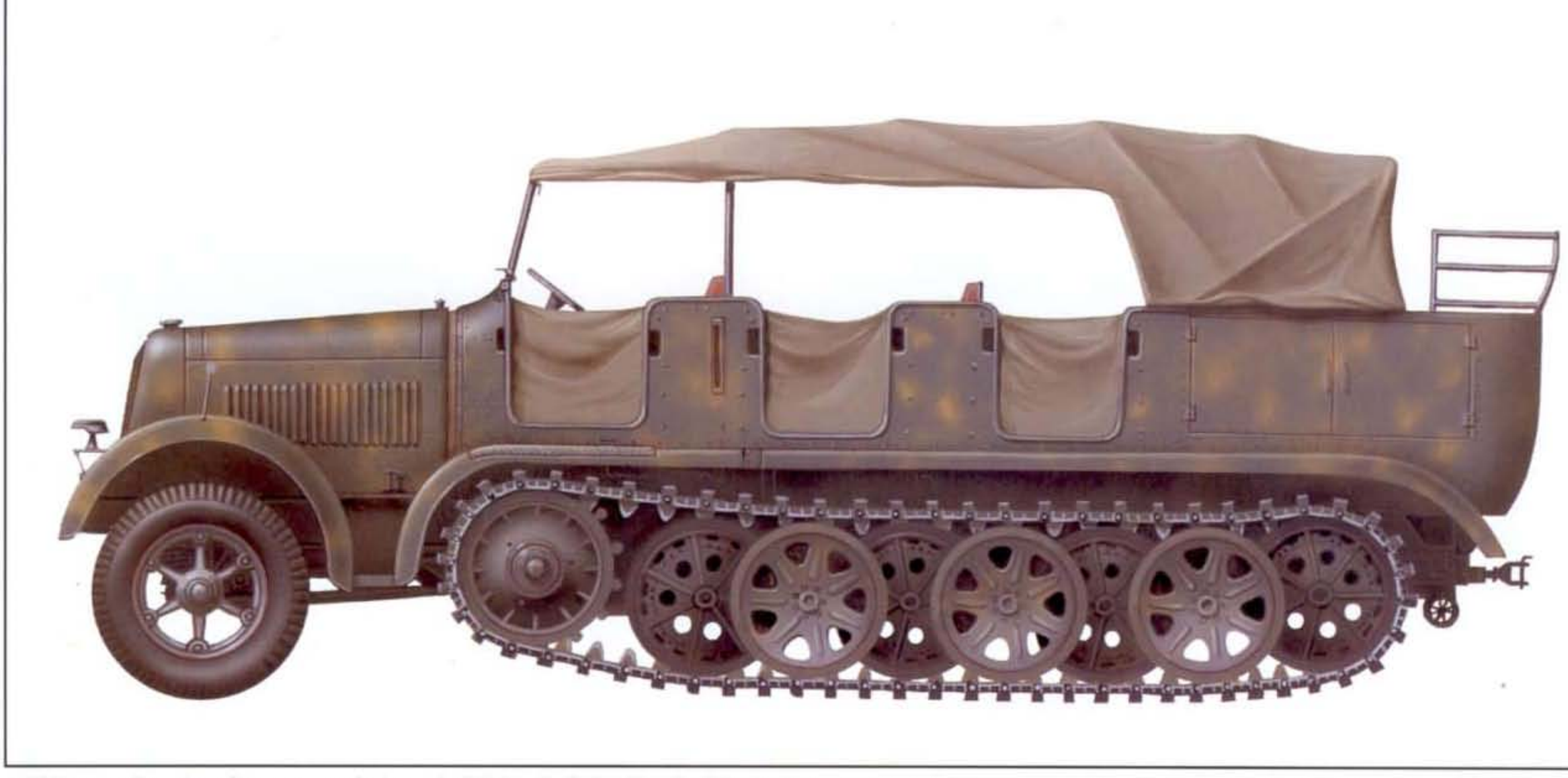
Mittlerer Schützenpanzerwagen Sd.Kfz. 251/1 Ausf. D, Panzergrenadier Regiment 33, 4.Panzer-Division, Poland, July 1944

This vehicle has a base coat of Dunkelgelb RAL 7028, over-sprayed with a "web" pattern of Olivgrun RAL 6003. The tactical number denotes the 9.Kompanie and is in black, with a white outline.



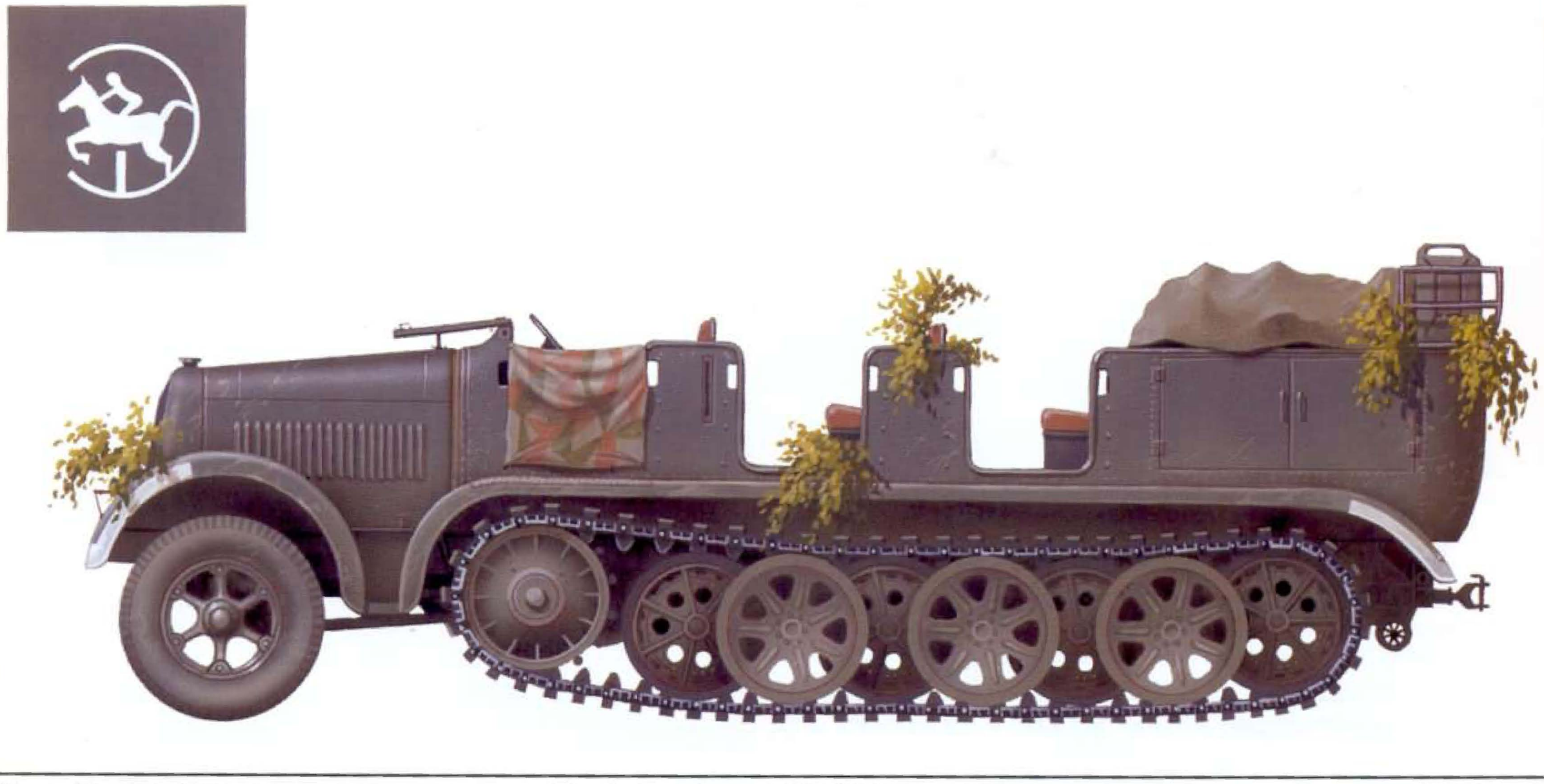
Mittlerer Zugkraftwagen 5-ton Sd.Kfz. 6, Unknown unit, Soviet Union, June 1941

This artillery tractor was finished in Dunkelgrau 7021, with no other visible markings.



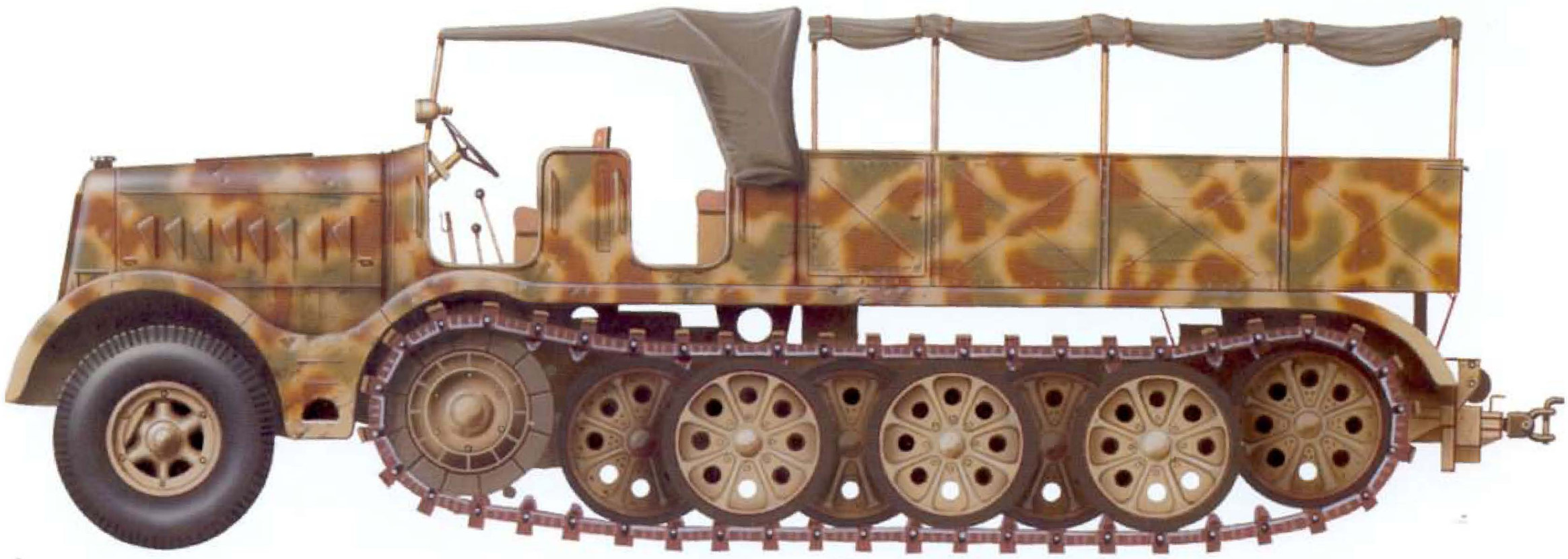
Mittlerer Zugkraftwagen 8-ton Sd.Kfz. 7, 3.Batterie/Flak-Regiment 33, Tobruk, Libya, 30 April, 1941

This artillery tractor was finished in Dunkelgrau 7021, with a lightly over-sprayed mottle pattern of either Gelbbraun RAL 8000 or Graugruen RAL 7008.



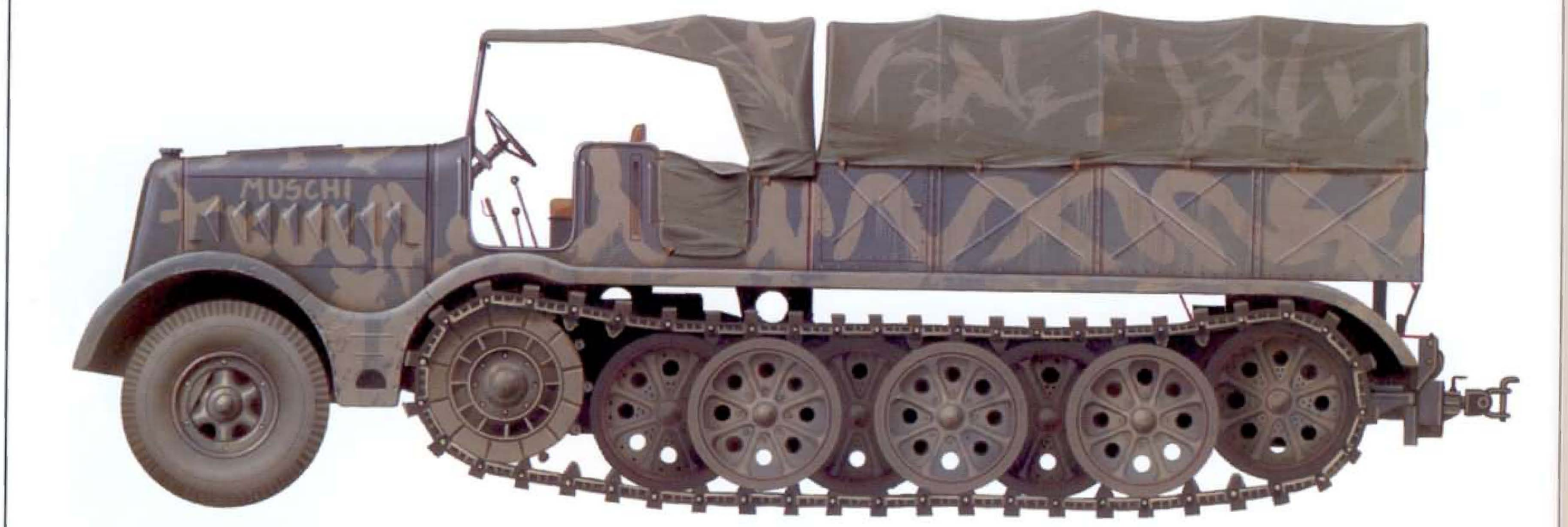
Mittlerer Zugkraftwagen 8-ton Sd.Kfz. 7, Artillerie Regiment 89, 24.Panzer-Division, Soviet Union, Summer, 1942

This artillery tractor was finished in overall Dunkelgrau 7021, with the division's unit insignia, a horse jumping a barrier, inside an open circle (denoting the division's cavalry lineage), in white on the fender.



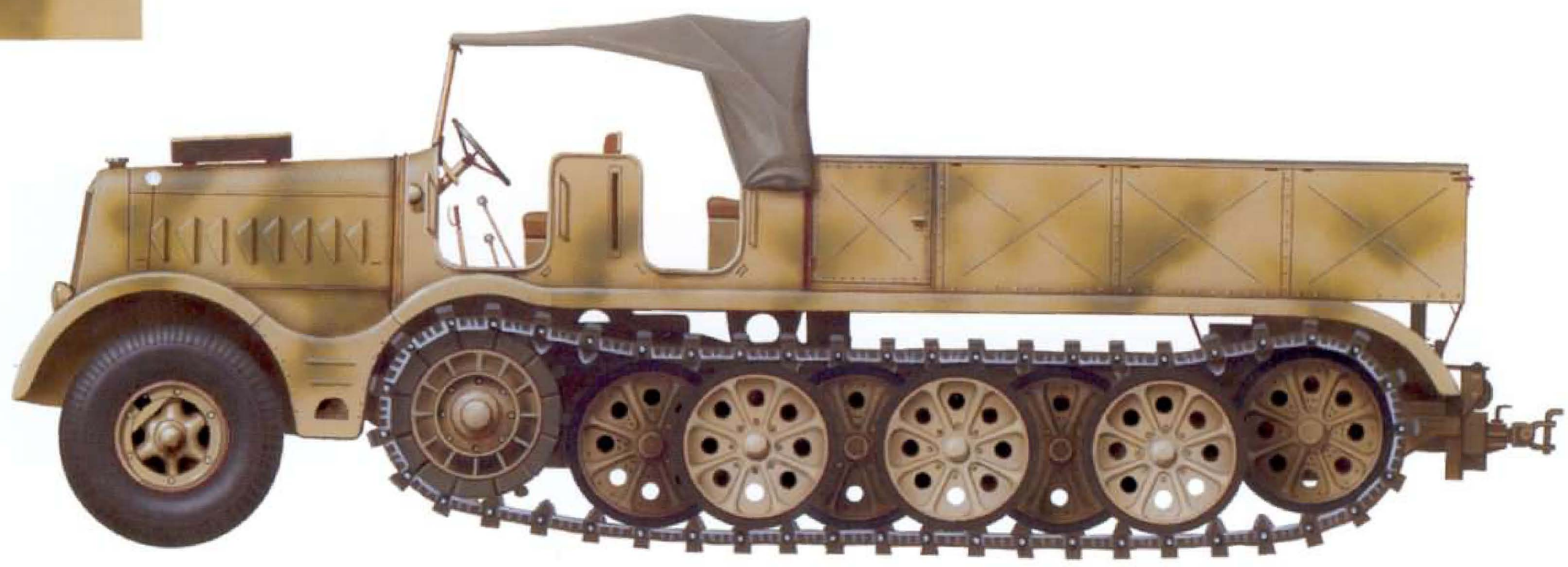
Schwerer Zugkraftwagen 18-ton Sd.Kfz. 9, Heeres s.Pz.Abt. 503, Summer 1943

This heavy tractor is covered in a base coat of Dunkelgelb RAL 7028, with a heavily over-sprayed mottle pattern of Olivgrun RAL 6003 and Rotbraun RAL 8017.



Schwerer Zugkraftwagen 18-ton Sd.Kfz. 9, Unknown unit, but possibly s.Art.Abt. (mot.) 833, Soviet Union, Summer, 1942

This heavy tractor is covered in Dunkelgrau 7021, over which an earth-brown color (probably applied using a locally available medium) was applied in large wavy brush strokes. The pattern was also applied to the canvas foul weather cover. There are no markings showing, other than the name "Muschi" (painted using the same medium that was employed for the camouflage pattern), on the engine compartment side panels. However, other vehicles in the unit (equipped with the 60cm Gerät 040 Mörser Karl) to which this Famo may belong, had the "artillery shell" insignia of the Abteilung, in white on the fender.



Schwerer Zugkraftwagen 18-ton Sd.Kfz. 9, 2.SS-Panzergrenadier-Division "Das Reich", Kursk, Soviet Union, July 1943

This heavy tractor is covered in a base coat of Dunkelgelb RAL 7028, with very faint, broad over-sprayed bands of Olivgrun RAL 6003. The temporary divisional marking for "Operation Zitadelle", consisting of a horizontal bar for a base with two vertical bars, in white, was applied to the front fenders and rear body panel.

This Sd.Kfz. 10/5 with 2cm FlaK 38 guards a waterfront area. Of note are the open rifle racks, completely un-covered conventional head lamps, Notek lamp, and the lack of gun shields. The FlaK 38 had a practical rate of fire of 220 rounds-per-minute, almost twice that of the earlier FlaK 30. At the dangerously close range of 100 meters, the FlaK gun's AP round could pierce 23mm of armor.

This crew trains on their Sd.Kfz. 10/4 with an un-shielded 2cm FlaK 30. Note the man at the far left with the range-finder, and the gun's commander using his binoculars to track a "target", while another crew member holds a magazine at the ready. This vehicle has first pattern road wheels and no rifle racks. Note also the tire pressure marking, in white, on the front fender.

With the crew clad in winter parkas, this Sd.Kfz. 10/5 with 2cm FlaK 38 surmounts a small obstacle. Here, the FlaK 38 can be identified by the muzzle's flash suppressor as well as the mounting bar seen on the lower inner face of the gun shields. This vehicle has enclosed rifle racks and second pattern road wheels.

This familiar photo shows a beautifully camouflage-painted Sd.Kfz. 10/5 mounting a shielded 2cm FlaK 38. Note that the crewmen's helmets are also painted to match the vehicle, which itself is in a three-tone scheme of Dunkelgelb RAL 7028 base, with a blotch pattern of Rotbraun RAL 8017 and Olivgrun RAL 6003. This vehicle is fitted with second pattern road wheels, enclosed rifle racks and Notek black-out driving lamp.

An apparently newly-arrived Sd.Kfz. 11 pulls a 10.5cm le.FH 18 up a steep road in North Africa. Note the pith helmet and canvas high-top desert boots worn by the man in the foreground. The gun sports covers on its muzzle, breech and gun-sight mount, as well as a large box stored on its trails. The tractor has a Notek lamp on the fender, as well as a canvas foul weather cover in place over the cab and troop compartment. Both appear to be camouflaged in the "Tropen" scheme, which officially consisted of Gelbbraun RAL 8000 and Graugruen RAL 7008.

Sd.Kfz. 11 belonging to SS-Division "Wiking" throws up a cloud of dust as it speeds along pulling a 10.5cm le.FH 18 from SS-Artillerie Regiment 5. Power was provided by the same 6-cylinder Maybach HL 42 TUKRM gasoline engine as used on the Sd.Kfz. 10, which produced 100 horsepower at 2800 rpm. This drove the vehicle at 33mph on roads to a range of 172 miles. Combat weight with 9 men on board was 7.2 tons while 3 tons could be towed. The vehicle was 18.3 feet long, 6.6 feet wide and 7.1 feet high, overall.

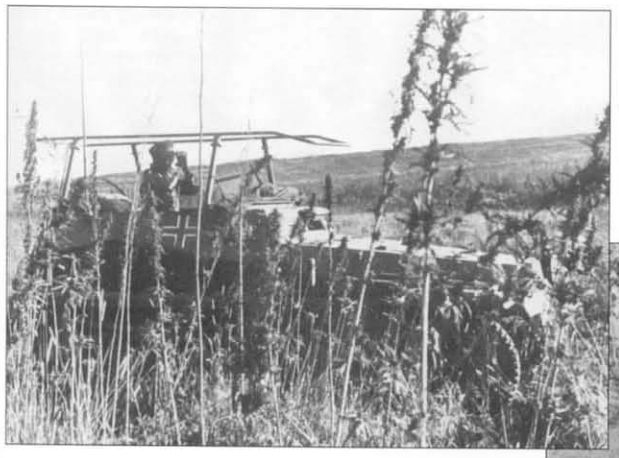
This Sd.Kfz. 11/4 fords a river while pulling a 7.5cm PaK 97/38. Note the disruptive camouflage pattern over the darker base color. The /4 Nebelkraftwagen body can be identified by the half-moon-shaped indentations for the door and locker handles, as well as the squared-off rear body section.

Another Sd.Kfz. 11/4 Nebelkraftwagen pulls a 15cm Nebelwerfer 41 launcher. The shape of the canvas cover on the launcher indicates that this is the six-tube 15cm version, rather than the five-tube 21cm Nebelwerfer 42.

Apparently here to stay (or getting ready to rapidly displace), the crew of this Sd.Kfz: 11/4 scrambles to work. Some are handling the 15cm rockets, while others busy themselves with the launcher. The tractor has its canvas cover erected and is well-camouflaged with foliage.

The crew of this Sd.Kfz. 250/1 is exchanging fire with the enemy using an MP-40 and the shielded MG34. These appear to be SS troops as indicated by their headgear. The le.SPW is missing much of the elements of its right side, such as part of the fender, all stowage, stowage locker door and head-lamp. Its radio aerial is also not fitted. The series was powered by a Maybach HL42 TRKM 6-cylinder gasoline engine that developed 100 horsepower at 2800 RPM, which drove the vehicle to a maximum speed of 40 mph on roads. The base vehicle weighed 6.4-tons, was 15-feet long, 6.3-feet wide, and 5.2-feet high.

This Sd.Kfz. 250/1 of 1.SS-Panzer-Division "Leibstandarte Adolf Hitler" completely lacks its conventional headlamps, making do with only the Notek blackout-driving lamp. The tactical sign on this camouflage-painted vehicle indicates that it belongs to a rifle platoon from either SS-Panzergrenadier Regiment 1 or 2. Note also the extended-height gun shield mounting an MG42 and the strange-looking antenna-like device next to the MG shield.



Unless one knows precisely which radios are fitted it is not possible to identify the specific sub-variant of the Sd.Kfz. 250/3. This /3 is partly obscured from enemy observation by the vegetation in the foreground. Note the wire lead going to the near-side rear support of the "Rahmanantenna" (frame antenna); this was connected to the vehicle's radios at the other end.

This camouflage-painted Sd.Kfz. 250/3 sports the later Sternantenna and mounts an MG42 behind the forward gun shield. The unit insignia on the front plate is not known. Spare track shoes are stored across the bow plate, while a Notek lamp is mounted on the fender. Note how the accompanying troops in the background are properly dispersed in a widely spread line, under the trees.

This later version of the Sd.Kfz. 250/3 has a Sternantenna (star antenna) replacing the earlier "Rahmanantenna" (frame antenna). The license plates indicate Heeres ownership, while the "Zero" prefix to the tac numbers indicate a company command vehicle. Note also a jerry can rack, a second rod antenna, the crowded condition of the vehicle and the forward-most crew member who wears what looks like an SS-pattern camouflage garment and helmet cover.

The crew of this /3 rapidly alights from their vehicle without the benefit of the rear door. Note the two antennae as well as the small half-round fittings on the rear wall of the superstructure. These held tow cables. Note also the Tac number on the lower rear plate, the position of the white-outline Balkenkreuz and the view-port located in the rear door. Particularly interesting is the placement of the national insignia on the hull side, at the apex of several adjoining armor plates.

The Sd.Kfz. 250/9 married the turret of a wheeled Sd.Kfz. 222 to the hull of the '250, creating the le.SPW (2cm) (Sd.Kfz. 250/9) Ausf. A. This vehicle has a custom-made canvas cover fitted to the Haengelafette (suspended carriage) turret, and a long box stowed along the near side, possibly to carry a spare 2cm gun tube. This version was armed with a 2cm KwK 38 and a co-axially-mounted 7.92mm MG34. Note the Sd.Kfz. 251/9 Ausf. C in the far background, which is followed by a Sd.Kfz. 11 and another '251/9.

A winter camouflage of white paint covers this Sd.Kfz. 250/9 Ausf. A, which is seen approaching a rural building. The turret does not have vision ports on the sides, while the anti-grenade screen is hinged open for better observation and easy egress from the vehicle. Note the amount of external stowage on this cramped vehicle as well as the rear-view mirror of the photographer's vehicle in the lower right of the photo.

Platoon commanders had instant light anti-tank support in the form of their command vehicles fitted with a 3.7cm PaK 36. In this case, the gun's shield is of the abbreviated sandwich-armor variety, on this white-painted Sd.Kfz. 250/10 Ausf. A.

Belonging to the same group as the previous Sd.Kfz. 250/10 Ausf. A, this /10 tows a trailer of undetermined type. It is also covered in white paint for concealment in the snow, and has the abbreviated sandwich-armor shields attached to the gunner's side of its 3.7cm PaK 36.

Pioneers repair a dusty track while being passed by a Sd.Kfz. 250/10 Ausf. A, again with an abbreviated sandwich-armor shield on the 3.7cm PaK 36. Note that the radio antenna is mounted further towards the rear of the vehicle than the mount seen in previous photos and that there is a wooden board stored on the fender. The far vehicle is marked with the Eiffel Tower insignia of the 23.Panzer Division and also carries the tactical marking for a Motorcycle Reconnaissance unit.

This oft-published photograph depicts an Sd.Kfz. 251/10 Ausf. A with a full shield on its 3.7cm PaK 36. The vehicle seems to have suffered a failure of the front suspension system as indicated by its angle and the odd position of the front wheels. Note also the position of the drive sprocket in relation to the remaining parts of the track segment.

A Leichte Gepanzerte Munitionskraftwagen Sd.Kfz. 252 from a Sturmgeschütz Abteilung passes through a heap of rubble in a war-ravaged urban environment. The unit insignia is difficult to see due to the vehicle's angle and its dusty condition. Three men are perched on the roof, while it is assumed that the driver is inside operating the vehicle. Officially, these vehicles only had a crew of two.

An Sd.Kfz. 252 gives shelter to a wounded Heeres (army) soldier and his comrades. Despite his discomfort, the wounded man has taken the time to consume a fast snack! From this angle, the vehicle can be identified as a '252 by the small circular pistol port below the view port, as well as by the rod antenna mount, which is attached to the roof plate.

Dressed in their holiday finery, local women (apparently in Yugoslavia) greet the crew of this dusty Sd.Kfz. 252. Modelers should note how the dust has been scuffed by hands and feet. There is a Tac number, "13", on the side of the engine compartment and a white outline Balkenkreuz just aft of the view-port. The round pistol port below the view-port positively identifies this vehicle as a '252.

This Sd.Kfz. 252 proves that it was a survivor, as it was originally designed to accompany StuG IIIs with the short-barreled 7.5cm gun, which first saw combat in 1940. Here it is seen supplying a later Ausf. G with the long-barreled 7.5cm StuK 40, which came into service in late 1942. Note the open hatches on the '252's roof and the large Tac number "324" on the lower flanks of its armored hull.

This Sd.Kfz. 252 follows a pair of StuG III Ausf. Fs (note the dome vents on their roofs) as they move along a track. Note the Sd.Ah. 3-1/1 trailer being pulled behind the '252, along with the Tac sign for a Sturmgeschütz battery applied to both the Munitionskraftwagen and trailer. The Sturmgeschütz themselves sport rather unique tactical markings consisting of colored stripes (white on the near vehicle, a darker color on the far one) and numbers, next to the Balkenkreuz national insignia.

Dubbed the "Leichte Gepanzerte Beobachtungskraftwagen", a pair of Sd.Kfz. 253s occupy the middle of a road accompanied by a pair of Pz.Kpfw. IIIs. Note the large stowage box on the center '253's rear plate and the opened semi-circular hatch on the roof; the latter feature positively identifies this as a '253.

Captured Red Army troops take their rest in the lee of a hill, guarded by a Sd.Kfz. 253. Just visible on the forward portion of the '253's roof is the rotating cupola, which mounted a S.F. scissors periscope. The crewman is standing in the square opening of the rear hatch.

While the fires of war rage in the background, this group of Germans observes the battlefield. This vehicle is identified as a Sd.Kfz. 253 by the antenna mount, the antenna storage trough and the shape of the hatch next to the crewman.

This Sd.Kfz. 253 is being utilized in its intended role, as a command and observation vehicle for a Sturmgeschütz battery. This vehicle has a Notek black-out driving lamp mounted on the fender. The radio antenna is lowered into a protective storage trough. This can just be seen projecting over the front of the roof, next to the officer standing in the cupola opening.

This photograph represents combined arms combat operations in its purest form. Here, a Sd.Kfz. 253 is providing direct command and observation facilities to a pair of StuG IIIs in an urban setting. Note that there are infantry close-by protecting the AFVs as they, in turn support the infantry.

This Sd.Kfz. 253 is easily identified by the cupola hatch, antenna mount and antenna storage trough, whose shadow can be seen falling across the front of the superstructure. The vehicle has several markings, in white, including a Balkenkreuz on the hull side, a small ring on the engine compartment side, and another unidentified marking midway between them.

A Sd.Kfz. 250/1 Ausf. B conceals itself at the edge of some foliage while in the background, a pair of dispersed Ausf. As hug a tree-line for protection from observation. Note the number "3" on the nose plate, the Notek lamp on the fender and the MG42 in the shielded mount on forward edge of the crew compartment.

A very scruffy Sd.Kfz. 250/1 Ausf. B (also called "Neu") precedes a Sd.Kfz. 234/3 with 7.5cm KwK 37, on a country road. The Ausf. B hull featured simplified construction as well as external stowage lockers that were integral with the fenders. Note the re-configured bow plate, as well as the new hull design. The latter also expanded the internal volume of this compact vehicle.

A pair of Sd.Kfz. 251/1 Ausf. Bs conduct a simulated assault on a trench during a training exercise, complete with pyrotechnics. Note how the crew o the vehicle in the foreground is being conditioned to fight from the vehicle, a point that is illustrated by the manned MG42 as well as the soldier who is pointing his weapon down into the "enemy" trench. The vehicle itself is finished in a base color of Dunkelgelb RAL 7028, with a darker color, or colors, over-sprayed note how the white Balkenkreuz national insignia is partially obscured by paint. There is a Bosch head-lamp mounted on the vehicle's fender.

A column of SS vehicles on a snow-bound road, pass a Volkswagen Type 82 Kübelwagen. The first half-track is a Sd.Kfz. 250/1 Ausf. B, the second appears to be a Sd.Kfz. 250/3 leichter Funkpanzerwagen radio vehicle (note the canvas covers on the antenna bases), while the third one is a Sd.Kfz. 250/9 Ausf. B, mounting a 2cm auto-cannon. To the left of the column of '250s, is a pair of Maultier cargo half-tracks, with the first towing an un-identified load. The lead '250 has a faint Tac number "23" on the front plate. Further down the road are a VW Type 166 "Schwimmwagen" and a heavy motorcycle with sidecar.

This Sd.Kfz. 250/8 Ausf. B was photographed in an almost new condition, showing details of its paint finish as well as the salient features of its type. Note the base color of Dunkelgelb RAL 7028 over-sprayed with random blotches of Olivgrun RAL 6003 and Rotbraun RAL 8017, and how the pattern partially obscures the shipping data that was stenciled just forward of the fender/stowage locker unit. The vehicle carries Wehrmacht Heeres license plates (WH-1725596) on the nose and a white outline Balkenkreuz on the upper superstructure side armor. The 7.5cm KwK 37 L/24 is in the "unified" K51 mount, which also has a 7.92mm MG42 mounted co-axially and was directed using the SfIZF1b/Rblf36 gun-sight. The vision port on the right side of the vehicle has been replaced with a blanking plate, a common alteration when a chassis was fitted with this gun mount. Note also the conduit that runs up to the Bosch head-lamp mounted on the fender, as well as the empty tool brackets behind it.

This side view of a leichter Schützenpanzerwagen (2cm) Sd.Kfz. 250/9 Ausf. B shows all of the main features of this Aufklärungspanzerwagen (armored reconnaissance vehicle). The major item is the fully-rotating six-sided Haengelafette (suspended mount) turret mounting a 2cm KwK 38 and a co-axial 7.92mm MG42 on top of the fully enclosed roof. Note the antenna at the turret rear for the short-range Fu.Spr.Ger.f radio set, the partly-external ammunition lockers and the frames with screens to keep hand grenades from entering the turret's opening. The base color is Dunkelgelb RAL 7028 with a mottle of one or possibly two colors, which would have officially been Olivgrun RAL 6003 and Rotbraun RAL 8017. Note the twisted remnants of a storage rack or boarding step at the vehicle's rear, the pad-locks on the integral stowage lockers, and the tiny vision slit on the forward end of the superstructure armor.

This profil photograph of a Sd.Kf 250/10 Ausf. B ha much in it of interest t a modeler. Note th position and style of th Balkenkreuz nationa marking, th 2.Kompanie markin "222" in a medium-ton color, outlined in whit and the shipping labe stenciled on th forward end of th integral stowag lockers. The 3.7cm Pa 36 is without a shield there is a jerry can rac on the hull's rear plat and there is an antenn base mounted on th near side of th superstructure armo plate. The vehicl appears to be in a dus covered base coat Dunkelgelb RAL 702 Note also how the fron fender configuratio differs from the /9 in th previous photograph.

Unique among the entire Sd.Kfz. 251 series, the Ausf. A had three view-ports on each side of the upper armored superstructure. Many Ausf. As also did not have a shielded forward machine gun, as is the case with the MG34 fitted to a sustained fire mount on this vehicle. The uniforms, insignia and footwear on these troops indicate a period later than when the Ausf. A was a first-line vehicle, suggesting that this is a training session.

A destroyed Sd.Kfz. 251/1 Ausf. A lies along a road. Note the grills on the top of the nose plate, the open radiator filler cap, the armor plates covering the area above the exhaust muffler and the remains of the forward machine gun mount, in this case the anti-aircraft type normally seen on the rear of the vehicle. At the far end of the ruptured superstructure armor plate is the rear-most view-port, hanging open. There is no rubber left on any of the visible wheels. Finally, note the Wehrmacht Heeres license plate and the white recognition panel painted on the engine access hatches.

A group of four Sd.Kfz. 251/1s, including an Ausf. A (at left) take the salute from a German Feldmarschall, seen at right with his raised baton. Anyone who has participated in close-order marching drill will note with some familiarity, that the men in the vehicles are arrayed with the tallest first, except for those with higher rank, as is usual in a parade formation. All vehicles are devoid of all but regulation tool stowage.

This Sd.Kfz. 251/1 Ausf. A also appears to be involved in a training exercise. It is identified as an Ausf. A by the three view-ports on the upper sides of the superstructure armor plates. Note that the forward MG34 is attached to the sustained-fire mount, while the second MG34 is being handed over the side of the half-track to a dismounted soldier; the radio antenna is also mounted in the usual spot on the right-hand forward side of the superstructure. The vehicle is plainly marked with white outline Balkenkreuze, as well as Wehrmacht Heeres license plates.

This Sd.Kfz. 251/1 Ausf. A features the standard gun shield on the forward mount, but no machine gun is fitted. It appears to have a lighter color roughly applied to the original dark base color, as can be seen around the Balkenkreuz national insignia, and the stenciling on the side stowage lockers. It has a nose-mounted Notek black-out driving lamp fitted, which would date the photo as after the French Campaign. The entire Sd.Kfz. 251 series was powered by the Maybach HL42 TRKM 6-cylinder gasoline engine, which developed 100 horsepower at 2800 rpm, giving a maximum speed on roads of 32 mph.

A column of German AFVs and motorcycles pause across the road from a pair of Kfz. 15 medium cross-country cars. A Sd.Kfz. 251/3 Ausf. A is followed by a Panzerfunkwagen Sd.Kfz. 263 (8 Rad) and a four-wheeled armored car of indeterminate type. Several vehicles have a white "K" applied, which denotes their attachment to Panzergruppe von Kleist. Note that the '251/3 has a full set of three stowage lockers. No vehicle shown here is equipped with a Notek lamp, which along with the white "K", identifies this photograph as having been taken during the French Campaign of 1940.

This photograph offers a tantalizing view of the inside of an Sd.Kfz. 251/6 Ausf. A. Note the radio sets, the "Rahmanantenna" (frame antenna) and its mounts, what appears to be a covered 8-meter "Kurbelmast" telescoping radio antenna mast (up forward), as well as the mechanism that opened and closed the rear doors. This vehicle has two stowage lockers on the visible side, instead of the normal three, and also has an earlier style jack stored on the rear fender. Note the white-painted area of the rear fender and the Wehrmacht Heeres license plates. The soldier climbing into the half-track is wearing the black Panzer crew uniform.

Shown during a training exercise, this Sd.Kfz. 251/10 Ausf. A is identified by its fully-shielded 3.7cm PaK 36. It has a Notek system mounted as can be seen by the tail-lamp on the far fender edge. The jack is different, as well as being mounted on the opposite side of the vehicle from that seen in a previous photograph. The shovels are not fitted allowing a view of the empty clips and metal strips that held them in place. Markings include white-outline Balkenkreuze, a Panzer rhomboid Tac marking and Wehrmacht Heeres license plates.

Their emotions clearly showing, the crew of an Sd.Kfz. 251/10 Ausf. A appears to be "in the thick of it". Note the full tool stowage (with the shovels simply jammed in place; their clamps are not fastened), the battle-scarred condition of the stowage lockers and radio antenna and the sandbags on either side of the PaK. The upper sections of the gun's shield have been removed, revealing the gunner's sight and clearly showing the small rests that the upper sections would normally contact when lowered.

A Sd.Kfz. 251/1 Ausf. B prepares to cross a small stream with the help of Pioneers. Note the primary external difference from the previous Ausf. A: only one view port, instead of three, on the superstructure armor sides. This vehicle has a Notek tail-lamp fitted which would date it as post-1940. Note the Tac marking for a motorized rifle company and the lower-than-usual position of the Balkenkreuz national insignia.

A Sd.Kfz. 251/1 Ausf. B moves up a slight incline, with its mate in the far background. Note the anti-aircraft-style machine gun mounts both fore and aft, the two different styles of shovel stored on the superstructure, and the neat appearance of the vehicle.

This pristine Sd.Kfz. 251/1 Ausf. B sports later MG42 general-purpose machine guns on both the anti-aircraft and sustained-fire mounts. The rear plate has a Panzer rhomboid in white, while the doors have a white-outline Balkenkreuz applied. The base vehicle weighed 9.35-tons, was 18.3-feet long, 6.5-feet wide, and 6.9-feet high.

One of Rommel's Sd.Kfz. 251/1 Ausf. Bs speeds past the recently re-captured fort at Mechili (which fell on 8 April, 1941), in Cyrenaica, on its way to take part in the first failed attempt to capture Tobruk. Although a "maintenance-heavy" vehicle, the Sd.Kfz. 251 performed well in the extreme conditions encountered in the desert. Note the Nazi flag on the hood used as an air recognition device, as well as the open port below the radiator which allowed better cooling of the engine. Just behind the cables hung across the nose and bumper is a Notek black-out lamp. If painted in the official colors for vehicles in Africa at this time, it would have been covered in the "first" two-tone scheme consisting of Gelbbraun RAL 8000 and Graugruen RAL 7008.

Another 251/1 Ausf. B, this time in France. This vehicle accompanies an Sd.Kfz. 10 and other vehicles down a village street, past a gas station, as the locals unconcernedly stroll past. Note the white upper half of the rear doors, reminiscent of the white-painted engine access doors seen in an earlier photograph, as well as the style and position of the Balkenkreuz. The Tac sign indicates a motorized rifle company.

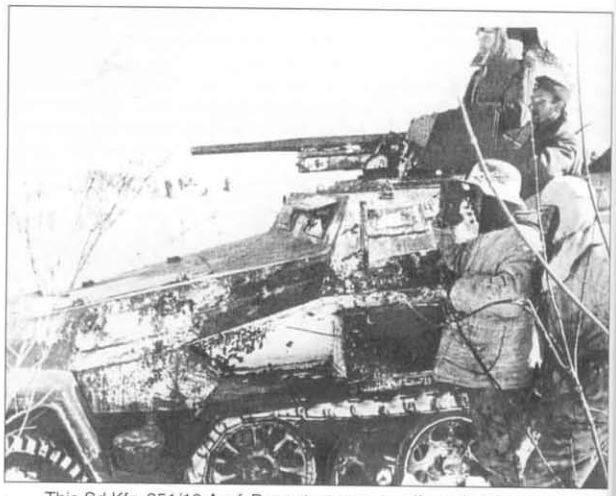
Commonly described as command vehicles due to the notion that the platforms seen fitted to the forward edge of the troop compartment area are map boards, these Sd.Kfz. 251s do not have any radio antennae visible. One would assume that a command vehicle without a radio would be a less than optimum means of commanding a mobile combined-arms force. In addition, the Tac sign on these 1.Panzer-Division vehicles do not indicate any command status, but rather designate these as from a motorized rifle platoon. The white "G" on the head-lamp indicates Guderian's XIX.Panzer-Korps, to which the division was attached in the 1940 French Campaign. There were very few StuG III Ausf. A used during the French Campaign, making the vehicle at left a relatively rare sight for that time.

An Sd.Kfz. 251/3 Ausf. B passes through a sandy area, while negotiating an incline. This vehicle is unique in having four (normally, only three were fitted) stowage lockers on the near side, all of which have stenciled information on them. There is a rod antenna on the rear superstructure edge, as well as the usual "Rahmanantenna" (frame antenna). The forward machine gun lacks a shield and the vehicle is fitted with the Notek black-out driving system.

This Sd.Kfz. 251/6 Ausf. B moves along a path through a brushy area. There is an 8-meter "Kurbelmast" (telescoping antenna mast) covered in canvas protruding through the "Rahmanantenna" (frame antenna). Note also the Notek lamp mounted on the fender, spare track sections on the bow and the canvas-covered conventional head-lamps.

The pair of antenna bases identifies this half-track as a probable Sd.Kfz. 251/3, while the lack of extra view-ports identify it as an Ausf. B chassis. There were several variations of the basic version, two of which were used by Luftwaffe personnel for coordination with air assets. The attitude of the crew as they appear to gaze skywards may also indicate that cooperation with nearby aircraft is taking place. Note the tow cable and spare road wheel stored on the vehicles near side, the Wehrmacht Heeres license plate and the hard-edge camouflage visible in certain areas where bright light has not washed out the original print.

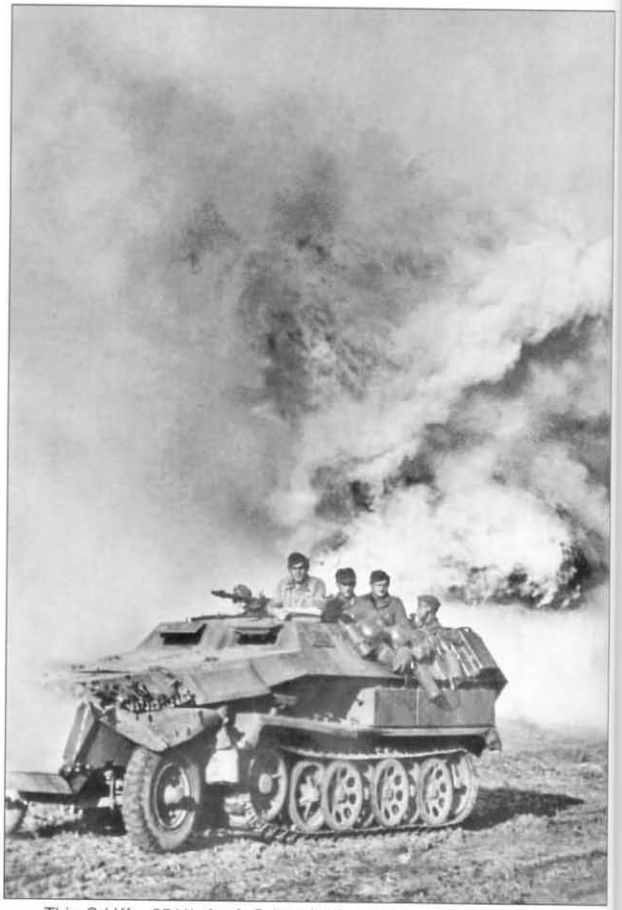
A Sd.Kfz. 251/10 Ausf. B is photographed at the moment of firing its 3.7cm PaK 36. The gun has a partial shield on its left side to protect the gunner while he mans the sights. This dusty vehicle has a rod antenna mounted in the more-or-less standard location.



This Sd.Kfz. 251/10 Ausf. B sports a very scruffy and worn winter white camouflage, as well as the abbreviated sandwich-style gun-shield for the PaK 36.

This fully-loaded Sd.Kfz. 251/1 Ausf. C disgorges its section of Panzergrenadiers. It is painted in a very unique hard-edged camouflage scheme featuring at least three colors applied in a very tight dapple pattern. The vehicle can be easily identified as an Ausf. C by the shape of the cowls on the sides of the engine compartment. Other identifying features are the location of the storage lockers and the shape of the fender both at the rear end and where it bends upwards in front of the forward locker.

A line of Ausf. Cs leave the factory. These are the riveted hulls only seen on some Ausf. Cs. Each has its troop compartment covered by a tarp stretched over the internal half-hoops. The conventional head-lamps are without any hoods, there are no tools seen, the forward gun shields are not fitted and the Notek black-out driving system is also absent.



This Sd.Kfz. 251/1 Ausf. C has its forward machine gun fixed to the sustained-fire mount. The Ausf. C was fitted with a newly-profiled nose plate, which was also used on the later Ausf. D version. Note the upward bend in the fenders just forward of the stowage lockers, another distinguishing feature of this version. The crew has stored some of their personal equipment items on the superstructure sides, as space within these vehicles was always at a premium.

column of '251s from von Kleist's 1.Panzergruppe moves forward during the fighting on the Eastern Front. Two half-tracks are equipped with frames to which launch boxes for 28 or 30cm Wurframen rockets could be attached to give the Panzergrenadiers the ability to immediately saturate an area with suppressive fire. Note the anxious Red Army prisoner on the front of the near vehicle and the white "K" on the center vehicle. During Operation Barbarossa, the 1.Panzergruppe contained the 9, 11, 13, 14 and 16.Panzer-Divisions.

Marked as belonging to a motorized rifle company of the 21.Panzer-Division, this Sd.Kfz. 251/1 Ausf. C plays host to a high-ranking German officer. Note the divisional symbol, the Tac marking and the large Balkenkreuz on the engine deck doors, as well as the smaller cross on the superstructure between the view-ports. Tool stowage on the Ausf. C was revised over the Ausf. B, thus the pick-axe mounted to the fender. Note also the horseshoe hanging from the lifting ring on the forward corner of the nose. This vehicle would have been finished at the factory in the official second "Tropen" camouflage scheme of Braun RAL 8020 and Grau RAL 7027.

A white-washed Sd.Kfz. 251/1 Ausf. C leads a column of other mittlerer Schützenpanzerwagens, including a Sd.Kfz. 251/9, all from 16.Panzer-Division, over several pioneer bridge ramps. All visible crewmen wear white parkas as well as white-painted helmets, while an MG42 is mounted behind the shield. Note the Notek lamp on the lead vehicle and the empty mounts for the conventional head-lamps, as well as the storage of spare tracks, jerry can and tow cable. The divisional insignia is painted over the white camouflage along with the Tac sign, either in black or red.

A group of Ausf. Cs negotiates a rather rough ravine running alongside a small creek. As was the case in the previous photo, a length of spare track is stored on the front plate. The first vehicle mounts a Notek lamp on the front fender and carries an MG42 behind the front shield.

As it negotiates some rough terrain, we are afforded a view under the nose of a very muddy Schützenpanzerwagen. This Ausf. C has its head-lamps mounted as well as a Notek black-out driving lamp; note the electrical conduit for the lamps, just behind the front armor plate. Helmets and other personal gear hang on the superstructure sides, a common practice as internal space within these vehicles was always at a premium.

An Ausf. C whose winter white camouflage scheme is all but obliterated. Note the external stowage of the crew's personal gear, the extra box on the fender forward of the stowage lockers and the pair of spare track sections hanging on the nose plate.

Yet another muddy, scruffy Ausf. C fords another small water obstacle. Of note is the unusual configuration of the cowl that covered the engine air intakes on the near-side of the half-track. This vehicle has a full compliment of head-lamps, as well as a Notek lamp, while it mounts an MG42 behind the forward shield.

A pair of German officers observes some far-off event from the top of their Sd.Kfz. 251/3 Ausf. C. Note that one of the engine deck access hatches is open, the welded-style Ausf. C-type cowl over the air intakes (a cast version existed) and the MG34 on the shielded mount. The pennant in the foreground indicates that this mittlerer Funkpanzerwagen belongs to a Panzer division's headquarters.

The crews of two Sd.Kfz. 251s, one an Ausf. C, the other an Ausf. D, exchange information during one of several miserable winters spent on the Eastern Front. The Ausf. C appears to be a /3, while the Ausf. D appears to be a standard m.SPW. The Ausf. C mounts the typical "Rahmanantenna" (frame antenna), as well as a rather thin rod antenna, while the Ausf. D has no antenna showing from this angle. What appears to be a pair of road wheels, minus the rubber rims, is stored on the engine deck of the Ausf. D, while helmets with a painted camouflage pattern hang on the side of the Ausf. C.

What started life as a Mittlerer Pioneerpanzerwagen Sd.Kfz. 251/7, has apparently been converted into a /3 Funkpanzerwagen on an Ausf. C hull. Note how the posts that support the "Rahmanantenna" (frame antenna) have been attached to the supports that normally held "Uebergangschiene" (portable bridge) sections. There are two Haft-Hohladung 3kg magnetic hollow-charge anti-tank mines casually laying on the front of the vehicle. There are only two, instead of three, stowage lockers on the near-side fender.

The crew of a rather new-appearing /7 look on with some amusement as several soldiers, some of whom may be SS, wrestle with an obstacle. Note the uncovered main head-lamps and the Notek lamp, and how each is mounted onto the vehicle. The portable bridge sections are mounted in the usual positions on this otherwise uncluttered Pioneerpanzerwagen. There were two versions of the /7, each differentiated by their radio fit.

When the Pz.Kpfw. IV was up-armed with the 7.5cm KwK 40 L/43 and L/48, the short 7.5cm KwK 37 L/24 became redundant. Numbers of them were mounted on several vehicle types, including the Sd.Kfz. 251/9 Ausf. C. This /9 wears the remains of a winter camouflage and mounts its radio antenna on the left side of the superstructure, next to where the radio was re-positioned when the gun was mounted. Note the SflZF1/Rblf32 gun-sight protruding over the recessed gun mount, and the crewmen who appear to be observing a distant target. The crew has also had metal strips attached to the area between the front and rear fenders in order to increase stowage capacity.

This Heeres Sd.Kfz. 251/10 Ausf. C fords a stream, as it leads a group of several m.SPWs. Note the style and location of the license plate, the empty mounts for the conventional headlamps, the Notek lamp, and the abbreviated spaced-armor shield for the 3.7cm PaK 36.

Although at first glance this may appear to be a standard m.SPW, the actions of the crew and the equipment they are using strongly suggest that this is a mittlerer Fernsprechpanzerwagen Sd.Kfz. 251/11, an armored telephone exchange and cable laying vehicle. Note the long pole used by one crewman and the second crewman feeding communications wire from a container on the vehicle's fender. Two sub-versions existed. One of them carried a "leichter Feldkabeltrager", the other carried a "mittlerer Feldkabeltrager", which presumably denoted the amount of communications cable carried.

Although most often seen mounted on an Ausf. D hull, several prototypes were built mounting the Flakdrilling on Ausf. C hulls, producing the Fliegerabwehr Schützenpanzerwagen (2cm MG151 Drilling) Sd.Kfz. 251/21. The weapon consisted of three 15mm or 2cm MG151 auto-cannon on a fully-rotating pedestal mount. Of note here are the muzzle flash suppressors on the gun tubes; normally the central one does not have the angle at the opening. This photo also shows a rare view of the inner surfaces of the Ausf. Cs stowage locker doors.

Several variations of the 2cm FlaK 38 were mounted to the Sd.Kfz. 251 m.SPW. The Luftwaffe had a specially-designed limited-production version that featured re-configured and hinged side plates that allowed full traverse of the weapon. The last type featured the so-called "2cm KwK 38 mit Flakrohr", in a small fully rotating turret. This photo depicts neither; rather, it is a field modified Ausf. C carrying a limited-traverse 2cm FlaK 38. It appears that the "Stahlhelm" insignia of the "Großdeutschland" is painted on the half-track's bow plate. In the foreground, the commander of a StuG III Ausf. G scans the sky for enemy aircraft.

In an impressive display of mechanized power, seven Sd.Kfz. 251/1 Ausf. Ds, and a pair of /9s, move along the edge of a small wood. Note the rather uncluttered appearance of all the vehicles and the mottle-pattern camouflage. The major change from the Ausf. C to the Ausf. D hulls was the complete re-configuration of the hull's armor plate layout, which was simplified to speed production. The large pair of head-lamps, as well as the Notek black-out driving lamps, seen on previous models was no longer fitted. In their place is a single Bosch head-lamp, with its removable, slotted cover.

This action photo depicts a half-dozen Sd.Kfz. 251 Ausf. Ds as they break cover to advance towards the fighting. All appear to be m.SPW infantry carriers. The near vehicle shows a three-digit Tac number, which is partially obscured by a 8.8cm Raketenpanzerbuchse 43 (RP43), also known as the "Panzerschreck" (Armored Terror).

Although the m.SPW in the center of the photograph would appear to be less-than-interesting, this image was included here because it also affords a unique view of the so-called "Ostketten" (Eastern Tracks) as fitted to a pair of StuG III Ausf. Gs. Note the wide configuration of the track links as well as the appearance of the square-tipped, notched guide teeth. These links resemble a smaller version of Tiger I tracks and are not "Winterketten", which had a much wider link with a tapered extension.

The commander of a Panther medium tank looks down upon a Sd.Kfz. 251/1 Ausf. D, which has its distinctive outline broken up by a camouflage net. Note the MG42 behind the gun-shield and the Bosch head-lamp on the fender.

A line-up of four Sd.Kfz. 251/1 Ausf. Ds (note the far vehicle, just under the trees) pause alongside a lake. Note the broad stripes of the camouflage scheme, which is largely rendered superfluous by the attached foliage. The road wheels are in a solid, dark color, suggesting this is a later vehicle, built when the base color of German AFVs was ordered changed to Olivgrun RAL 6003.

A group of German panzers, m.SPWs and a lone VW Kübelwagen advances towards the enemy, again illustrating the actual practice of combined-arms operations. The Pz.Kpfw. IV is probably an Ausf. H as can be seen by the small, square muffler for the turret traverse motor seen on the left side of the rear plate.

A pair of Panzergrenadiers, each carrying a Panzerfaust 30 (note the sights peculiar to that version) mill about behind their m.SPW. Note the "T"-shaped handle on the vehicle's door and how it connects to the mechanism that unlocks the door.

The other main distinguishing feature of the Ausf. D hull is the configuration of the storage lockers, which are continuous and integral with the lower fenders. All previous versions had separate lockers mounted on various locations on the fenders. Note also that this m.SPW has the earlier Notek black-out driving lamp and is painted in the base color of Dunkelgelb RAL 7028.

This photograph affords an excellent view of how the Germans secured an m.SPW to a railroad flat car. Note the wood blocks and chocks attached to the flat car's platform at the front and rear of the wheels and track sections. There are also blocks attached to the platform on the outsides of the wheels and tracks to prevent lateral movement. Chains are not in evidence anywhere. The vehicle also has a Notek lamp mounted.

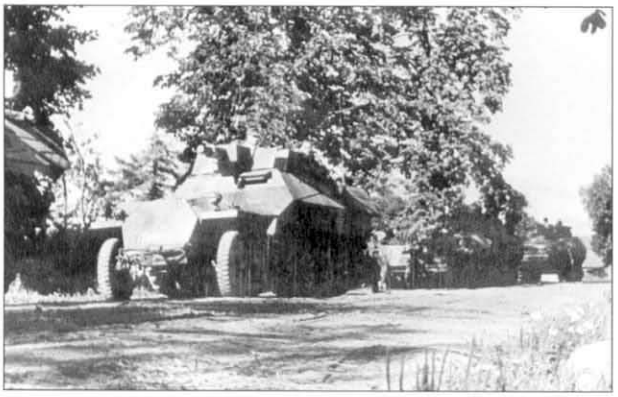
This pair of mittlerer Pioneerpanzerwagen Sd.Kfz. 251/7 Ausf. D is also secured to a railroad flat car's platform in the same manner as was seen in the previous photograph. Again note the position of the securing chocks and blocks and the absence of any safety chains. Note that the anti-aircraft MG42 is mounted at the ready and that one vehicle is missing the portable bridge sections.

A line of mittlerer Pioneerpanzerwagen Sd.Kfz. 251/7 Ausf. D mounted on railroad flat cars for shipment, stretches as far as the eye can see. The troops lounging upon the vehicles seem quite unconcerned regarding any possible allied air interdiction, unlike those seen in the previous photograph. These vehicles have been secured with chocks in front of and behind the wheels and tracks, but (also unlike the previous photos) there are no blocks placed on the outer edges to prevent lateral movement.

This mittlerer Pioneerpanzerwagen Sd.Kfz. 251/7 Ausf. D, belonging the 12.SS-Panzer-Division "Hitlerjugend", moves along a road. Note the unit insignia on the right-hand side of the upper forward plate, next to the vision port. This vehicle is equipped with a Notek black-out driving lamp and has a bunch of logs strapped to the nose plate.

An American soldier makes notes as he peers through the engine access opening of a Sd.Kfz. 251/9. This version had the "unified" 7.5cm K51 (Sf) mount, which was also seen on the Sd.Kfz. 250/8 light armored halftrack and the Sd.Kfz. 234/3 8-wheeled armored car. In the background rests a Sd.Kfz. 251/21 mounting three 15mm or 2cm MG151 auto-cannon, on the "Drilling" mount. Compare the Drilling's shield to the last photo in this series and note the difference in "deepness" between the two, by comparing the distance of the gun tube openings to the shield's top edge.

A mittlerer Schützenpanzerwagen (7.5cm KwK 37) Sd.Kfz. 251/9 armored support vehicle, mounting short 7.5cm tank gun, moves forward, while a group of Panzergrenadiers moves along the drainage ditch on the road side. This is the later version featuring a "unified" mount that could be mounted in the field, but which resulted in a higher silhouette. This heavily camouflaged vehicle has a Bosch head-lamp mounted on the fender, and a blanking plate fitted in place of the vision port opposite the driver's station.



A column of AFVs including Sd.Kfz. 251/9 Ausf. Ds parks discreetly among the trees, in an effort to thwart detection by the enemy. The first "Stummel" (called "Stump" due to the stubby nature of the 7.5cm L/24 KwK 37) has a name faintly visible on the side of the engine compartment, a Bosch head-lamp mounted on the fender, and a blanking plate replacing the vision port opposite the driver's station.

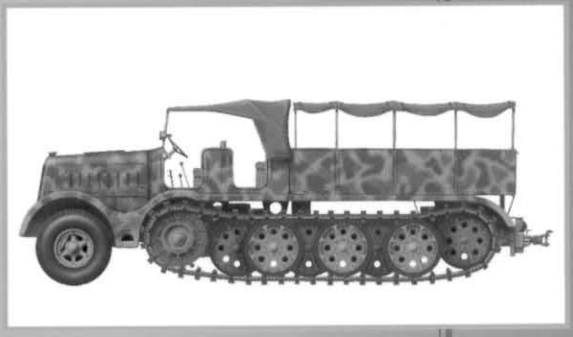
Not often photographed, this mittlerer Flammpanzerwagen Sd.Kfz. 251/16 Ausf. D armored flamethrower is silhouetted against the sky. This vehicle was equipped with two 1.4cm flame projector mounts in slightly staggered positions, one on either side of the troop compartment. 700 liters of flame fuel was carried, allowing for 80 one-second bursts with ranges of up to 50 meters. A Koebe pump powered the projectors, while the crew numbered four (commander/radio operator, driver and two flame thrower operators).

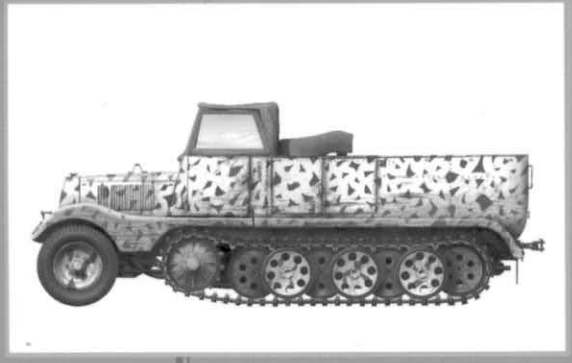
This oft-seen photograph depicts a mittlerer Schützenpanzerwagen Sd.Kfz. 251/17 Ausf. D mounting a 2cm KwK 38 mit Flakrohr in a fully rotating turret. This vehicle was knocked out along with other German AFVs of the Führer Grenadier Brigade, including the StuG III Ausf. G in the background, near Heiderscheid, during the Ardennes Offensive. An American soldier examines the gutted vehicle, while all sorts of debris, and the corpse of a German soldier, litter the battlefield.

The crew of an 8cm Gr.W 34 mortar conducts a fire mission, protected by an Sd.Kfz. 251/10 Ausf. D. As the 3.7cm PaK was totally obsolete by the time the Ausf. D reached production, one may imagine that there were not many so converted. This particular vehicle has a camouflage scheme consisting of vertical bands, which do not cover the weather stripping added over the tops of the stowage lockers. Note the position of the radio antenna mount.

A Fliegerabwehr Schützenpanzerwagen (2cm MG151 Drilling) Sd.Kfz. 251/21 Ausf. D lies destroyed along the side of a road. The vehicle was torn by high explosives, which have ripped and ruptured the body's armor. The tracks have been completely blown away, the rubber on the road wheels has bu away, and the open storage lockers are devoid of contents. Note the smaller shield above the mount which protected the gunner and his telescopic There were two different gun shield arrangements, as well as variations of the short armor panels along the hull's upper edges.

This photograph depic Sd.Kfz. 251/21 Au which has also ripped a Compared to vehicle, the remai the unfortu crewman are remarkably condition. Note ho vehicle has come at the flange wher front and segments connected, and the floor plate wit entire shielded mount still attache become sepa from the hull. Deta the guns and m that can be include: the teles direct-sight along its glare shield o forward edge of "deeper" gun sh and travel lock o lower edge of shield. Ammu boxes and belted ammunition are scattered about several places.





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